REPORT

of

COOPERATIVE INVESTIGATION OF JOINT SPACING

in

CONCRETE PAVEMENTS

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I. PURPOSE AND DESIGN OF PAVEMENT

I. PURPOSE AND DESIGN OF PAVEMENT

In order to aid in a final determination of a rational, economical, and practical jointing method for concrete pavement, and to obtain factual data for future construction, the Kentucky Department of Highways built 6.27 miles of experimental pavement during the summer of 1940. This project was one of those planned by the Public Roads Administration and the Portland Cement Association in cooperation with the various states.

The new road is on the Owensboro-Hartford section of State Route 71, six miles south-east of Owensboro, in Daviess County, and is designated as Federal Aid Project No. 125 F(2)S.

Specifically, the purpose of this experimental work is to study the desirable spacing of transverse expansion joints in concrete pavements and the amount of expansion space required per unit of pavement length, and to study the efficiency of dummy contraction joints with and without dowels for the transfer of load. Also, to study the behavior under traffic of pavement in which only weakened plane contraction joints without load transfer bars are installed.

For test purposes the project is divided into seven different experimental types, or sections which vary in length from 1200 feet to 5000 feet. Each section with the exception of section 1 is duplicated in non-adjacent parts of the project in order that there will be a check on the behavior. The sections are arranged in this order: 7-6-5-4-3-2-1 - Standard Pavement - 2-3-4-5-6-7. The Department's standard pavement was used in the central mile of the project. This section extends through a swamp and was considered unsuitable for experimental pavement. Design of the various sections and joint spacings may be seen from Table I.

TABLE I.- DESIGN OF EXPERIMENTAL SECTIONS.

Experimental Section No.	Cross Section inches	Net Length	Subgrade Paper	Wire Fabric Reinf. lbs. per 100 sq. ft.	Expansion Joints			Contraction Joints		
					Spacing feet	Type	Load Transfer Bars	Spacing feet	Type	Load Transfer Bars
7	7 Uni.	0.237 Mi.	Yes	None	120	Std.	None	20	W'kn'd. Plane	None
6	9-7-9	0.284 "	"	70	120	"	Std.	60	"	Std.
5	"	0.284 "	"	None	120	"	"	20	"	"
4	"	0.284 "	"	"	120	"	"	20	"	None
3	"	0.473 "	"	"	400	"	"	20	"	"
2	"	0.568 "	"	"	800	"	"	20	"	"
1	"	0.947 "	"	"	---	--	--	20	"	"
Std.	"	1.128 "	"	Std.	Std.	Std.	Std.	Std.	Std.	Std.
2	"	0.473 "	"	None	800	"	"	20	W'kn'd. Plane	None
3	"	0.473 "	"	"	400	"	"	20	"	"
4	"	0.284 "	"	"	120	"	"	20	"	"
5	"	0.284 "	"	"	120	"	"	20	"	Std.
6	"	0.284 "	"	70	120	"	"	60	"	"
7	7 Uni.	0.227 "	"	None	120	"	None	20	"	None

Concerning the design of this experimental pavement, the following points should be noted:

1. With the exception of section 7, the pavement is of the thickened edge type and the cross section is the standard design employed by the Department of Highways. Section 7 is uniform thickness pavement, and the thickness is such that, with respect to maximum computed stresses, the slabs are approximately comparable with the thickened edge slabs used in the other sections.

2. A concealed metal open type longitudinal joint is used with 1/2-inch round deformed tie bars, 4 feet in length, and spaced 5 feet apart. This metal joint is held in place by steel pins and extends to within 1/2-inch of the surface of the pavement.

3. All expansion joints are one inch wide with a non-extruding filler and, except in sections 7, are provided with standard load transfer bars.

4. Contraction joints are of the weakened plane type and the spacing in the unreinforced sections is 20 feet. Standard load transfer bars are used in contraction joints only in sections 5, 6, and the standard section.

5. The system of standard load transfer bars consists of three-quarter inch plain bars two feet long, painted and oiled on alternate ends and spaced one foot apart. To provide for expansion, metal caps are placed on the unbonded end of bars in all expansion joints.

6. Wire fabric reinforcing is used only in sections 6 and the standard section.

II. PROCEDURE

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It has been shown by previous investigations of the Public Roads Administration that the efficiency of transverse joints, from the standpoint of stress reduction, cannot be determined by measurements of maximum deflections under load. For example, when a load is applied on one side of a joint the maximum deflections of the two joint edges may be identical but the maximum stress in the loaded edge may be more than twice as great as in the unloaded edge (see figure 32, Public Roads, October 1936). The efficiency of joints in pavements can be determined only by accurate and time-consuming measurements of stress deformations in the concrete and it is not practicable to make such observations on pavements under traffic. Therefore, it is proposed to study the action of transverse dummy joints in full-size pavement slabs that will not be subjected to traffic.

This study will be carried on at the laboratories of the Public Roads Administration. The test slabs will be constructed so that the width of joint opening can be controlled and so that the joints can be closed and the slabs subjected to direct compressive stress, thus simulating the condition of a pavement subjected to compressive stress due to expansion. Observations will be made of the efficiency of the joints as affected by the following variables:

(a) Width of joint opening

(b) Restraint due to direct compressive stress in the slab.

[1] "Outline of Proposed Experimental Concrete Pavement Construction", Public Roads Administration, dated Feb. 1940.

(c) Type of aggregate

(d) Maximum size of aggregate

(e) Doweled vs. undoweled joints.

With the information obtained from these tests, it should be possible to make a reasonably accurate estimate of the efficiency of joints of the same type in service under field conditions, providing the changes in widths which occur in service are known.

A schedule of measurements sufficient to establish various changes in widths of the joints and temperature cycle is planned for the experimental projects.

In certain studies of the surface irregularities of concrete pavements that have been made, it has been noted that there is sometimes a tendency for short slabs to become slightly tilted on the subgrade, resulting in increased surface roughness at the joints. There is evidence to indicate that this tilting action in short pavement slabs may be controlled through the use of dowels at joints or by the action of aggregate interlock at cracks and weakened plane joints, if the cracks or weakened plane joints are maintained in a relatively tightly closed condition.

The effect of the use of very short slabs on the riding qualities of concrete pavements and the effects of the various other design details that might have an influence on the general smoothness of the pavement surface have never been thoroughly investigated. It is desirable that additional data be obtained and for this purpose a series of level measurements has been included.

III. OUTLINE OF OBSERVATIONS AND INSTRUMENTATION

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Changes in widths that occur in the joints of concrete pavements may be of a daily, a seasonal, or a permanent nature, and the magnitude of the changes will depend upon both the spacing of the joints and upon the arrangements of the expansion and contraction joints as well as upon those factors that determine the volume change characteristics of the concrete itself. Therefore, measurements of the daily, seasonal, and permanent changes in widths have been scheduled for a number of representative joints in all of the experimental sections.

Four sets of measurements will be made to determine the magnitude of the seasonal changes in widths of the joints. The measurements are to made in the Winter (February), Spring (May), Summer (August), and Fall (November).

Measurements also will be made of the daily changes in widths of the joints on selected days at each of the four seasons. Likewise, a set of measurements will be made at various joints selected for studying permanent changes in width. Recommendations call for this set to be made during the first summer following construction.

Measurements of the daily and seasonal changes in widths of the joints will be carried out for only a year or two. However, studies of permanent changes will be continued for a period of several years.

Selected portions of each section are to be used for this study. Each portion is located where the grade is relatively level, the degree of horizontal curvature a minimum, and where the depth of embankment does not exceed four feet.

Small brass gage points are set in the longitudinal axis of the pavement on each side of the joints. A vernier caliper reading directly to one-thousandth of an inch is used to measure the distance between gage points (Fig. 50). The difference between measurements at various times and temperatures is the change in width of the joint. Temperature readings are obtained by means of a mercury thermometer inserted in pavement wells.

Short carriage bolts set in the pavement and located in the selected portions are to be used for level points. Level bench marks were established along the edges of the pavement, and the original elevation of all level points obtained within two weeks after the completion of construction. Subsequent level observations are scheduled for normal winter and summer conditions after the pavement is several years old.

In addition to the observations outlined, a number of periodic condition and crack surveys are scheduled.

IV. GRADE CONSTRUCTION AND SOIL OUTLINE

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Grade construction and a five-inch surface of traffic bound river gravel for two sections of this project, one section from station 397+49.4 to station 565+00 and the other from station 690+00 to station 737+00, was started July 21, 1939, and completed November 3, 1939. These two sections were then opened to traffic until pavement construction started. The remaining section from station 565+00 to station 690+00 was constructed between April 15, 1940, and June 4, 1940, but no river gravel was placed on this section. All embankments were constructed in successive horizontal layers 12 inches in thickness, and each layer compacted with a sheep's foot roller.

During pavement construction most of the river gravel placed on the two aforementioned sections was removed from the subgrade in order to provide shoulder material.

The parent geological formation of the area through which this project extends is the Conemaugh, Allegheny, and Pottsville series of the Pennsylvanian Age. Predominant soils of this area are alluvium deposits classified as silty loams, clay loams, and loams, however, expansive colloidal clays exist in small sections. The loams become loose and dusty during extended periods of dry weather, are highly stable at optimum moisture content, but lose stability with excessive water. Soil samples were taken from the subgrade every 200 linear feet, and analysis of each are included in the test reports.

V. MATERIALS USED IN PAVEMENT CONSTRUCTION

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The cement was Kosmos Normal Portland, meeting all requirements of the American Society for Testing Materials. It was sacked and shipped by barge direct from the mill at Louisville, Kentucky, to the proportioning plant at Owensboro, Kentucky. The results of physical tests on this cement are given in Table II.

TABLE II.- PHYSICAL PROPERTIES OF CEMENT.

Average of 82 tests.

Steam test for soundness	Satisfactory.
Normal consistency, per cent	24.7.
Time of set (Gillmore)	
Initial	2 hours, 40 minutes.
Final	4 hours, 28 minutes.
Tensile strength (p.s.i., 1:3 Ottawa sand mortar)	
7 days	413
28 days	508

The aggregates were Ohio River sand and gravel obtained from the Boone bar, 8 miles upstream from Owensboro, Kentucky. Aggregate from this one source was used throughout the project. The physical properties and grading of the aggregates may be seen from Table III.

TABLE III.- PROPERTIES OF AGGREGATES.

All Tests are Prevailing A.S.T.M. Standards or Tentative Standards.

		Fine aggregate	Coarse Aggregate
PHYSICAL PROPERTIES			
Average of 8 tests on each aggregate.			
Bulk specific gravity		2.63	2.64
Weight per cubic foot (dry-rodded)	pounds	113	113
Voids	per cent	31.1	31.4
Sodium sulfate, weight loss	do do	3.9	1.8
Absorption, 3 hr. boiling water	do do		1.2
Los Angeles abrasion	do do		26.6
Loss by washing	do do	0.5	
Colorimetric test		O.K.	
Strength ratio at 7 days		1.4	
GRADINGS			
Average of 215 tests on gravel and 173 tests on sand.			
Passing			
2 - inch sieve	per cent		100
1-1/2-inch sieve	do do		100
3/4 - inch sieve	do do		62
3/8 - inch sieve	do do		16
No. 4 sieve	do do		1
3/8 - inch sieve	do do	100	
No. 4 sieve	do do	95	
No. 16 sieve	do do	58	
No. 50 sieve	do do	7	
No. 100 sieve	do do	1	

Premolded bituminous fiber joint filler obtained from the Laclede Steel Company, Saint Louis, Missouri, was used in all expansion and contraction joints, except as hereinafter noted.

VI. MIX PROPORTIONS

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The absolute volume method of concrete mix design was used. Requirements for the mix were 1.5 barrels of cement per cubic yard of concrete; a maximum water content of 5.75 gallons of water per bag of cement and a slump of one and one-half to three inches. The fine aggregate varied from 34 per cent to 35 per cent of the total dry weight of combined fine and coarse aggregate in the mix. The data on the mixes of each section and the date placed are shown in Table IV.

The consistency of the mix as placed throughout the project was very uniform. The mix was well proportioned, finished easily, and did not appear to be over or under sanded.

Bulk specific gravity and free moisture tests were made daily on samples of aggregate taken from the weighing bins. Corrections were made for free moisture in the aggregate, and also for the decrease in absolute volume caused by underrun in the water content necessary to maintain the required slump.

TABLE IV.- DATA ON CONCRETE MIXES.

	Station	Station	Date Placed 1940	Proportions by Weight, 6 Bags Cement	Slump Inches	W/C
Sec. No. 7	397+49.4	401+50.0	8-16	1127:2187	1-1/2	.67
	401+50.0	404+50.0	8-16	1127:2187	1-1/2	.66
	404+50.0	406+81.4	8-16	1127:2187	1-1/2	.67
	406+81.4	410+21.0	8-15	1127:2187	1-1/2	.67
Sec. No. 6	410+21.0	412+75.0	8-15	1127:2187	1-1/2	.67
	412+75.0	416+95.0	8-15	1140:2213	1-1/2	.63
	416+95.0	419+81.0	8-15	1127:2187	1-1/2	.67
	419+81.0	421+35.0	8-14	1127:2187	1-1/2	.67
	421+35.0	422+35.0	8-14	1130:2194	1-1/2	.65
	422+35.0	425+21.0	8-14	1127:2187	1-1/2	.67
Sec. No. 5	425+21.0	426+12.0	8-14	1127:2187	1-1/2	.67
	426+12.0	429+21.0	8-14	1136:2204	1-1/2	.65
	429+21.0	429+79.0	8-13	1136:2204		.65
	429+79.0	432+79.0	8-13	1127:2187		.66
	432+79.0	433+82.5	8-13	1118:2169		.69
	433+82.5	436+14.0	8-12	1118:2169	1-3/4	.69
	436+14.0	438+24.0	8-12	1127:2187	1-3/4	.67
	438+24.0	440+01.0	8-12	1132:2197	1-3/4	.64
Sec. No. 4	440+01.0	444+74.0	8-12	1132:2197	1-3/4	.64
	444+74.0	447+90.5	8-12	1127:2187	1-3/4	.66
	447+90.5	455+02.0	8-10	1127:2187	1-1/2	.66
Sec. No. 3	455+02.0	459+31.0	8-10	1127:2187	1-1/2	.66
	459+31.0	460+75.0	8-9	1127:2187	1-3/4	.66
	460+75.0	465+90.0	8-9	1127:2187	1-3/4	.67
	465+90.0	469+21.4	8-9	1118:2169	1-3/4	.68
	469+21.4	469+66.0	8-8	1118:2169	1-3/4	.68
	469+66.0	479+30.0	8-8	1127:2187	1-3/4	.66
	479+30.0	480+00.0	8-8	1127:2187	1-3/4	.65
Sec. No. 2	480+00.0	482+32.3	8-8	1127:2187	1-3/4	.65
	482+32.3	484+60.0	8-7	1127:2187	2-1/4	.65
	484+60.0	491+20.0	8-7	1118:2169	2-1/4	.69
	491+20.0	493+45.0	8-7	1127:2187	2-1/4	.66
	493+45.0	497+00.0	8-7	1127:2177	2-1/4	.66
	497+00.0	500+55.0	8-6	1127:2177	1-1/2	.66
	500+55.0	505+78.0	8-6	1127:2177	1-1/2	.67
	505+78.0	507+95.0	8-6	1127:2177	1-1/2	.65
	507+95.0	508+80.0	8-6	1127:2177	1-1/2	.67
	508+80.0	510+00.0	8-5	1127:2177	1-1/2	.67

TABLE IV.- (Continued) DATA ON CONCRETE MIXES.

	Station	Station	Date Placed 1940	Proportions by Weight, 6 Bags Cement	Slump Inches	W/C
Sec. No. 1	510+00.0	521+24.0	8-5	1127:2177	1-1/2	.67
	521+24.0	526+70.0	8-2	1127:2177	2	.67
	526+70.0	531+40.0	8-2	1136:2204	2	.62
	531+40.0	534+44.0	8-2	1127:2177	2	.67
	534+44.0	539+00.0	8-1	1127:2177	2-1/2	.67
	539+00.0	541+90.0	8-1	1136:2204	2-1/2	.62
	541+90.0	544+00.0	8-1	1145:2221	2-1/2	.59
	544+00.0	546+31.8	8-1	1127:2177	2-1/2	.66
	546+31.8	548+10.0	7-31	1127:2177	1-1/2	.66
	548+10.0	550+35.0	7-31	1140:2213	1-1/2	.61
	550+35.0	554+95.0	7-31	1127:2177	1-1/2	.67
	554+95.0	557+60.3	7-31	1122:2178	1-1/2	.67
	557+60.3	560+00.0	7-30	1122:2178	2-1/2	.67
Sec. Std.	560+00.0	560+50.0	7-30	1122:2178	2-1/2	.67
	560+50.0	563+85.0	7-30	1118:2169	2-1/2	.69
	563+85.0	566+85.0	7-30	1136:2204	2-1/2	.62
	566+85.0	568+00.5	7-30	1122:2178	2-1/2	.68
	568+00.5	570+75.0	7-29	1122:2178	1-3/8	.68
	570+75.0	574+15.0	7-29	1118:2169	1-3/8	.68
	574+15.0	579+02.0	7-29	1127:2177	1-3/8	.66
	579+02.0	579+25.0	7-27	1127:2177	2	.66
	579+25.0	581+02.0	7-27	1127:2177	2	.67
	581+02.0	582+67.0	Bridge			
	582+67.0	583+00.0	7-27	1127:2177	2	.67
	583+00.0	585+81.0	7-27	1122:2178	2	.67
	585+81.0	586+61.0	7-26	1122:2178	1-3/4	.67
	586+61.0	588+26.0	Bridge			
	588+26.0	590+26.0	7-26	1122:2178	1-3/4	.67
	590+26.0	591+09.0	7-26	1118:2169	1-3/4	.68
	591+09.0	593+75.0	7-26	1127:2177	1-3/4	.67
	593+75.0	595+01.0	7-26	1122:2178	1-3/4	.67
	595+01.0	596+66.0	Bridge			
	596+66.0	601+14.5	7-25	1122:2178	2	.67
	601+14.5	602+99.5	Bridge			
	602+99.5	604+00.0	7-25	1136:2204	2	.63
	604+00.0	604+73.0	7-25	1127:2187	2	.66
	604+73.0	605+50.0	7-24	1127:2187		.66
	605+50.0	609+17.5	7-24	1127:2187		.67
	609+17.5	610+82.5	Bridge			
	610+82.5	614+30.0	7-23	1122:2178	1-7/8	.67
	614+30.0	617+30.0	7-23	1136:2204	1-7/8	.64
	617+30.0	620+10.0	7-23	1131:2196	1-7/8	.66
	620+10.0	621+75.0	7-22	1131:2196	1	.66
	621+75.0	625+70.0	7-22	1127:2187	1	.66
	625+70.0	627+40.0	7-22	1140:2213	1	.63
	627+40.0	629+29.6	7-22	1136:2204	1	.64
	629+29.6	630+00.0	7-20	1136:2204	1-7/8	.64

TABLE IV.-(Continued) DATA ON CONCRETE MIXES.

	Station	Station	Date Placed 1940	Proportions by Weight, 6 Bags Cement	Slump Inches	W/C
Sec. No. 2	630+00.0	631+09.0	7-20	1136:2204	1-7/8	.64
	631+09.0	633+35.0	7-20	1126:2188	1-7/8	.65
	633+35.0	638+30.0	7-20	1122:2178	1-7/8	.66
	638+30.0	640+99.7	7-20	1145:2221	1-7/8	.61
	640+99.7	644+00.0	7-19	1145:2221	1-7/8	.61
	644+00.0	649+10.0	7-19	1131:2196	1-7/8	.65
	649+10.0	652+00.0	7-19	1140:2213	1-7/8	.63
	652+00.0	654+00.0	7-19	1154:2239	1-7/8	.57
	654+00.0	655+00.0	7-18	1154:2239	1-1/2	.57
Sec. No. 3	655+00.0	660+30.0	7-18	1154:2239	1-1/2	.57
	660+30.0	664+30.0	7-18	1145:2221	1-1/2	.60
	664+30.0	667+19.6	7-18	1145:2221	1-1/2	.61
	667+19.6	670+00.0	7-17	1145:2221	1-1/2	.61
	670+00.0	673+65.0	7-17	1145:2221	1-1/2	.60
	673+65.0	675+90.0	7-17	1131:2196	1-1/2	.65
	675+90.0	676+39.6	7-17	1136:2204	1-1/2	.64
	676+39.6	679+25.0	7-16	1136:2204		.64
	679+25.0	680+00.0	7-16	1127:2187		.67
Sec. No. 4	680+00.0	681+00.6	7-16	1127:2187		.67
	681+00.6	683+85.0	7-15	1127:2187	1-1/2	.67
	683+85.0	686+80.0	7-15	1131:2196	1-1/2	.66
	686+80.0	691+80.0	7-15	1131:2196	1-1/2	.65
	691+80.0	693+29.5	7-15	1145:2221	1-1/2	.61
	693+29.5	695+00.0	7-13	1145:2221	1-3/4	.61
Sec. No. 5	695+00.0	695+85.0	7-13	1145:2221	1-3/4	.61
	695+85.0	699+55.0	7-13	1136:2204	1-3/4	.66
	699+55.0	702+65.0	7-13	1149:2231	1-3/4	.60
	702+65.0	703+40.0	7-13	1145:2221	1-3/4	.61
	703+40.0	704+90.0	7-12	1145:2221	1-3/4	.61
	704+90.0	705+40.0	7-12	1136:2204	1-3/4	.66
	705+40.0	710+00.0	7-11	1136:2204	1-3/4	.66
Sec. No. 6	710+00.0	712+75.0	7-11	1136:2204	1-3/4	.66
	712+75.0	714+75.0	7-11	1145:2221	1-3/4	.61
	714+75.0	716+00.0	7-11	1118:2169	1-3/4	.69
	716+00.0	717+50.0	7-10	1118:2169	1-7/8	.69
	717+50.0	721+00.0	7-10	1122:2178	1-7/8	.67
	721+00.0	724+90.0	7-10	1118:2169	1-7/8	.69
	724+90.0	725+00.0	7-10	1109:2152	1-7/8	.72
Sec. No. 7	725+00.0	725+40.0	7-10	1109:2152	1-7/8	.72
	725+40.0	726+00.0	7-9	1109:2152	1-3/4	.72
	726+00.0	730+00.0	7-9	1151:2136	1-3/4	.69
	730+00.0	731+09.5	7-9	1162:2157	1-3/4	.66
	731+09.5	733+00.0	7-8	1162:2157	1-3/4	.66
	733+00.0	737+00.0	7-8	1132:2102	1-3/4	.66

VII. PAVEMENT CONSTRUCTION PROCEDURE

VII. PAVEMENT CONSTRUCTION PROCEDURE

The contractor's equipment in the order of use on this experimental concrete pavement was as follows:

A. Batching plant.

(1) 1-Bucyrus crane.

(2) 1-Blaw-Knox double compartment weighing bin, 50 tons capacity.

(3) 30-Two batch trucks.

(4) 1-Three batch truck.

B. Project site.

(1) 1-Five tooth scarifier.

(2) 2-Caterpillar diesel 50 tractors.

(3) 1-Austin-Western No. 10 grader.

(4) 1-Cleveland formgrader.

(5) 480-Blaw-Knox road forms 10 feet in length by 8 inches in width by 9 inches in height.

(6) 150-Lip curb forms 10 feet in length by 2 inches in width by 3 inches in height.

(7) 1-R. B. Power finegrader.

(8) 1-Huber five ton roller.

(9) 1-Koehring Paver 27E A.G.C. Standard.

(10) 1-Subgrade planer, weight 2500 pounds.

(11) 1-Scratch template, teeth 6 inches apart.

(12) 1-Non-power pavement strike off template.

(13) 1-Steel longitudinal joint template.

(14) 1-Jackson electric concrete vibrator.

(15) 1-Jager-Lakewood double screed finishing machine.

(16) 1-Form bridge for joint cutting.

(17) 1-Koehring longitudinal finishing machine.

(18) 2-Steel straightedges 10 feet in length.

(19) 1-Wood float 5 feet in length by 6 inches in width.

(20) 8-Wood hand floats.

(21) 6-Joint edgers, 1/4-inch radius.

(22) 1-Joint edger, 1/8-inch radius.

(23) 1-Steel T-beam contraction joint cutter 1-7/8 inches in depth by 1/2-inch in width.

(24) 1-Form bridge for joint finishing.

(25) 1-Bowstring rubber belt 8 inches in width.

(26) 1-Bassine fiber concrete broom 18 inches in width.

(27) 820-Strips burlap, weight 12 ounces per square yard, 22 feet in length by 3 feet in width.

(28) 10-Sections 3/4-inch garden hose 50 feet in length.

(29) 2-Lever principle form lifters, rubber tires.

(30) 90-Sisalkraft road curing blankets, 60 feet in length by 22 feet in width.

With the exception of the forms, all of the equipment was new and in excellent condition. The forms were several years old and required continual inspection and culling of sections. A few minor breakdowns occurred which are listed in the diary.

PREPARATION OF THE SUBGRADE

The subgrade was first scarified, and then reshaped to approximate grade with an Ausin-Western No. 10 grader (Fig. 4). A Cleveland formgrader was used to dig the form trench (Fig. 5), after which the forms were set and tamped by hand. Forms were in place at all times from 600 feet to 1000 feet in advance of placing concrete. The subgrade was prepared with an R. B. Power Finegrader (Fig. 6)

followed by a Huber five ton roller (Fig. 7). Moistening of the subgrade in front of the paver was strictly adhered to throughout the project.

BATCH TRANSPORTATION

All batches were designed on the basis of six bags of cement or one cubic yard of concrete. The aggregates were weighed in a Blaw Knox double compartment weighing bin (Fig. 2). Materials were hauled in two batch trucks from the proportioning plant at Owensboro, Kentucky, to the project site. The trucks first received the fine and coarse aggregate for two batches, and then passed by the cement loading platform where six bags of cement was loaded on each batch. When the trucks approached to within 1000 feet of the paver the bags were opened and the cement spread over the aggregate.

MIXING

Pavement construction started on July 8, 1940, at station 737+00 and continued until completion on August 16, 1940, at station 397+49.4. The entire width of the slab, 20 feet, was constructed in one operation. A new Koehring 27-E A.G.C. Standard paver operating between the side forms was used for mixing the concrete. This paver was equipped with a batch meter and timing device which automatically locked the discharge lever during the full time of mixing and released it at the end of the mixing period; the device was equipped with an indicator bell adjusted to ring each time the lock was released. Each batch was mixed one minute after the materials composing the batch were in the mixer.

SUBGRADE INSULATION

Immediately behind the paver and just prior to the placing

of the concrete the entire subgrade was insulated from the concrete by means of Kraft subgrade paper placed longitudinally on the subgrade.

DOWEL SPACERS

Laclede welded dowel spacers which remained in place were used to secure proper spacing and alignment of load transfer bars in all joints requiring the use of load transfer (Figs. 16,17). Some of the spot welds on the dowel spacers for the expansion and contraction joints from station 725+00 to station 721+40 were broken in hauling. An attempt to wire spacers together in broken places proved very unsatisfactory. Immediate inspection was made of all spacers on the project, and the broken ones rejected.

WIRE FABRIC INSTALLATION

In sections 6 and the standard section the initial pour of concrete was struck off two inches below grade for installation of the wire fabric.

VIBRATION

Concrete along the side forms, and all longitudinal and transverse joints was vibrated with a Spud electric vibrator operating at a frequency of 3600 impulses per minute.

FINISHING

Initial mechanical finishing of the concrete was accomplished with two finishing machines, a Jaeger-Lakewood double screed followed by a Koehring longitudinal (Figs. 20,21,29). Each machine made from two to four passes over the concrete depending on the grade of the pavement, the workability of the concrete, etc. The pavement was then checked for trueness with ten foot metal straightedges (Figs.

31,32). Belting of the surface with a bowstring rubber belt and brooming with a bassine fiber broom completed the surface finishing operations.

LIP CURB CONSTRUCTION

Standard wedge shaped lip curb 3-inches in height by 9-inches in width was constructed as specified on the plans. Lip curb forms were bolted on the side forms after the finishing equipment had passed. Concrete for this purpose was transported in wheelbarrows from the mixer, and finished by hand.

EXPANSION JOINTS

Premoulded bituminous fiber expansion joint filler (1-inch by 6-1/2 inches) was used in all expansion joints. A metal channel cap 1-1/4 inches in width was placed over the joint filler and held in place by wires. All expansion joints were completely assembled before being placed on the subgrade. Top edges of abutting slabs were rounded to a radius of 1/4-inch, and the metal cap removed.

CONTRACTION JOINTS

From station 737+00 to station 630+00 and from station 560+00 to station 450+21 premoulded bituminous fiber contraction joint filler 1/4-inch by 1-1/4 inches was used in all contraction joints. The same material with dimensions 1/4-inch by 2-inches was used in the contraction joints in the standard section from station 630+00 to station 560+00. The weakened plane groove for the contraction joints was formed with a steel T-beam contraction joint cutter 1/2-inch by 1-7/8 inches (Fig. 25). Joint filler capped with a metal channel cap held in place by friction was then inserted in

the weakened plane grooves, top edges of abutting slabs were rounded, and the metal cap removed. The joint was later sealed with 1/2-inch of OA-2 crack and joint filler.

At the beginning of construction station 737+00, the metal channel caps for the contraction joints were 5/8-inch in width. The top edges of the joint were then edged with a 1/4-inch radius edging tool, which resulted in a completed joint 1-inch in width at the surface of the pavement. Beginning at station 712+40 new channel caps 1/2-inch in width were secured. These caps were used up to station 450+21. With the new caps the finished width of the joint was 3/4-inch. Between stations 704+00 and 450+21 a new 1/8-inch radius edging tool was used, however, the width of the completed contraction joint remained 3/4-inch (Figs. 34,39).

From station 450+21 to the completion of the project station 397+49.4, the weakened plane for the contraction joints was formed by inserting two steel strips (1/4-inch by 1-1/2 inches by 10 feet) 1/4-inch below the surface of the pavement. Using the steel strips as a guide, the joint was edged with a 1/8-inch radius, edging tool, and the steel strips removed (Fig. 27). With this method the completed contraction joint was 1/2-inch in width at the surface of the pavement (Fig. 35). The entire depth of the joint was then poured with OA-2 crack and joint filler.

Due to the rigidity of the steel strips contraction joints constructed in this manner were straight and well formed. The flexible character of the fiber joint filler and caps resulted in many crooked completed joints, and variable distances of the filler below the surface of the pavement. Later inspection showed that the 1/2-

inch of OA-2 crack and joint filler did not bond properly to the premolded filler. In many places pieces of the crack and joint filler had been worked out of the joint by the action of traffic, leaving the premoulded fiber exposed, and the joint open to the infiltration of water and foreign material. In the section where the entire depth of the joint was poured the material was in place and the joint better protected.

Forming weakened plane contraction joints with steel templates and subsequent pouring of the entire joint with a suitable crack and joint filler is worthy of serious consideration as a standard method.

CURING

As soon after the final finishing operation as the concrete had set sufficiently to prevent marring of the surface, the pavement was entirely covered with one thickness of thoroughly wetted burlap (12 ounces per square yard). This burlap was kept thoroughly wet during the day on which the pavement was laid (Fig. 37). During the following morning the burlap was removed and the pavement straight-edged. Then the pavement was thoroughly wetted and covered with Sisalkraft curing paper which remained in place from 72 to 96 hours after placement of the concrete (Fig. 41). Except for a short section this method of curing was used throughout the project.

Due to insufficient curing paper a section of pavement between stations 478+25 and 469+21.4 was covered with earth to a minimum depth of two inches. This earth was kept wet for 6 days and removed 21 days after placement of the concrete. A detailed account of the daily curing is given in the diary contained in this report.

JOINT SEALING

Cleaning and sealing of the joints started at station 737+00, July 29, 1940. The joints were first thoroughly cleaned with steel scrapers and brooms, and then filled slightly less than flush with OA-2 crack and joint filler at a temperature of approximately 250 F. While the workmanship of sealing the joints was satisfactory, later inspection showed the seal to be very unsatisfactory for two reasons. First, the inherent quality of the OA-2, second, granular material which had been worked into the seal during shoulder construction.

PAVEMENT INSPECTION

Close inspection of the entire project was made on September 12, 1940. This inspection showed that no scaling of the surface, spalling of the joints, or cracking of the slab had occurred at any place.

VIII. CONTROL TESTS

VIII. CONTROL TESTS

One cylinder was made as a control specimen for each 500 linear feet of pavement. The molds were of steel 6 by 12 inches, and rested on metal base plates. Fabrication of the specimens was in accordance with A.S.T.M. Method C31-39. After 24 hours the cylinders were removed from the molds, and cured in wet earth from 18 days to 28 days. The average compressive strength of 68 specimens at 28 days was 4908 p.s.i., and 71 per cent of the specimens showed values within 10 per cent of the average.

In order to check the thickness of the pavement and the compressive strength of the concrete, one core was drilled from each 1000 linear feet of pavement. The theoretical thickness of the pavement was 7 inches, and the average actual thickness as measured by 35 cores was 7.109 inches. Compression tests on 34 of these cores at ages varying from 41 to 80 days averaged 4856 p.s.i., and 47 per cent were within 10 per cent of the average. The difference in cylinder and core strength is attributed to the different curing methods used. Results of the compression tests on cylinders and cores are shown in Table V.

Three beams were made as control specimens about midday on each pour. Steel beam molds 6 by 6 by 42 inches were used. Molding of the specimens was in accordance with A.S.T.M. Method C78-39. After 24 hours the beams were removed from the molds, and cured in wet earth for 27 days. The beams were tested in flexure on a Humboldt center loading machine of 24 inch span. The average of all

modulus of rupture tests at 28 days was 1002p.s.i., and 77 per cent of the tests were within 10 per cent of the average. Results of the flexural tests and the variation of each from the average of all tests may be seen from Tables VI and VII.

TABLE V.- COMPRESSIVE STRENGTH OF CYLINDERS AND CORES.

	Compressive Strength Cylinders			Compressive Strength Cores			
	Station	28 days, psi.	Variation from Average, per cent	Station	Psi.	Age days	Variation from Average, per cent
Sec. No. 7	400+00	3910	20.3	398+45.0	4406	41	9.3
	405+00	5080	3.5	408+09.0	3596	42	25.9
	410+00	5440	10.8				
Sec. No. 6	415+00	5130	4.5	418+20.0	3983	43	18.0
	420+00	4330	11.8				
	425+00	5870	19.6				
Sec. No. 5	430+00	5370	9.4	428+09.6	4900	44	0.9
	435+00	4470	8.9	438+07.5	5393	45	11.1
	440+00	4740	3.4				
Sec. No. 4	445+00	4840	1.4	448+14.4	4442	47	8.5
	450+00	4420	9.9				
	455+00	4830	1.6				
Sec. No. 3	460+00	6200	26.3	458+11.5	4900	47	0.9
	465+00	4595	6.4	468+09.6	4019	49	17.2
	470+00	5905	20.3	478+72.0	4583	50	5.6
	475+00	5055	3.0				
	480+00	4895	0.3				
Sec. No. 2	485+00	4310	12.2	488+10.0	5464	50	12.5
	490+00	4370	11.0	498+10.0	4618	51	4.9
	495+00	4190	14.6	508+07.0	4829	51	0.6
	500+00	5890	20.0				
	505+00	4540	7.5				
	510+00	4880	0.6				
Sec. No. 1	515+00	5270	7.4	518+33.5	5993	52	23.4
	520+00	3890	20.7	528+11.0	6733	55	38.7
	525+00	4880	0.6	538+73.0	5288	56	8.9
	530+00	4315	12.1	548+09.4	4865	58	0.2
	535+00	3890	20.7	558+72.0	5041	59	3.8
	540+00	3930	19.9				
	545+00	4880	0.6				
	550+00	4810	2.0				
	555+00	5130	4.5				
	560+00	4950	0.9				

TABLE V.- (Continued) COMPRESSIVE STRENGTH OF CYLINDERS AND CORES.

	Compressive Strength Cylinders			Compressive Strength Cores			
	Station	28 days, psi.	Variation from Average, per cent	Station	Psi.	Age days	Variation from Average, per cent
Sec. Std.	565+00	4420	9.9	568+10.0	3737	60	23.0
	570+00	4950	0.9	578+19.3	5182	59	6.7
	575+00	5090	3.7	588+85.0	4477	63	7.8
	580+00	5234	6.6	598+37.5	5182	64	6.7
	585+00	4525	7.8	608+16.0	4900	64	0.9
	590+00	5300	8.0	628+05.6	5464	66	12.5
	595+00	5340	8.8				
	600+00	4950	0.9				
	605+00	5040	2.7				
	610+00	4820	1.8				
	615+00	4860	1.0				
	620+00	4930	0.4				
	625+00	5020	2.3				
	630+00	5090	3.7				
Sec. No. 2	635+00	4760	3.0	638+50.6	4759	69	2.0
	640+00	5220	6.4	648+11.0	6275	69	29.2
	645+00	4860	1.0				
	650+00	5120	4.3				
	655+00	5550	13.1				
Sec. No. 3	660+00	4630	5.7	658+30.0	3983	71	18.0
	665+00	5230	6.6	668+14.0	3243	72	33.2
	670+00	5690	15.9	678+10.1	3455	73	28.9
	675+00	4690	4.4				
	680+00	4360	11.2				
Sec. No. 4	685+00	4860	1.0	688+12.5	4759	73	2.0
	690+00	4950	0.9				
	695+00	5000	1.9				
Sec. No. 5	700+00	5220	6.4	698+13.0	4230	76	12.9
	705+00	5800	18.2	708+08.3	5605	78	15.4
	710+00	4890	0.4				
Sec. No. 6	715+00	4510	8.1	718+23.0	5605	79	15.4
	720+00	5190	5.7				
	725+00	5860	19.4				
Sec. No. 7	730+00	4620	5.9	728+11.5	5393	80	11.1
	735+00	3980	18.9	735+82.0	5816	80	19.8

Average compressive strength of all cylinders, 28 days 4908 psi.

Average compressive strength of all cores, 60 days 4856 psi.

TABLE VI.- MODULUS OF RUPTURE OF BEAMS.

	Modulus of Rupture, 28 days, psi.						
	Station	1	2	3	4	5	6
Sec. No. 7	402+50	1067	1087	1160	1113	1073	1067
Sec. No. 6	417+00	1100	1073	1033	1060	1053	1087
Sec. No. 5	427+00	1007	960	1047	1040	987	960
Sec. No. 4	441+00	1067	933	1153	1200	980	967
	451+50	933	1073	967	1093	1127	1033
Sec. No. 3	463+00	1000	1033	947	1120	920	960
	475+25	1040	1013	960	1040	1027	1113
Sec. No. 2	490+50	913	1067	1113	1093	1133	1080
	500+30	1013	927	1020	1000	1100	1053
Sec. No. 1	512+75	967	1067	780	1020	980	913
	523+00	960	960	987	933	907	813
	538+75	880	907	867	1013	907	1093
	547+00	973	1013	947	947	980	1000
	559+00	1053	1093	1013	1007	1087	1033
Std. Sec.	567+50	987	1073	1120	1153	1047	1133
	579+50	1067	1053	1027	1047	980	1013
	591+50	1033	1127	1040	1073	1067	1007
	600+40	1033	1000	1080	1040	1027	1000
	611+50	1047	1020	907	820	900	1053
	620+50	920	920	1087	1040	1067	1053
Sec. No. 2	634+00	987	887	1100	1233	913	980
	647+00	900	987	1060	947	840	927
Sec. No. 3	661+00	893	887	873	873	947	893
	669+75	973	853	900	953	987	920
Sec. No. 4	687+50	1000	1027	907	853	1080	993
Sec. No. 5	698+50	813	1073	827	840	960	880
	703+75	980	1047	887	1053	887	960
Sec. No. 6	710+75	893	1013	1053	1133	973	1067
	720+70	1033	1087	1067	953	1053	1080
Sec. No. 7	725+80	933	960				

Modulus of rupture average of all tests, 28 days 1002 psi.

TABLE VII.- VARIATION OF MODULUS OF RUPTURE TESTS FROM THE AVERAGE OF ALL TESTS.

	Station	Per Cent					
		1	2	3	4	5	6
Sec. No. 7	402+50	6.5	8.5	15.8	11.1	7.1	6.5
Sec. No. 6	417+00	9.8	7.1	3.1	5.8	5.1	8.5
Sec. No. 5	427+00	0.5	4.2	4.5	3.8	1.5	4.2
Sec. No. 4	441+00	6.5	6.9	15.1	19.8	2.2	3.5
	451+50	6.9	7.1	3.5	9.1	12.5	3.1
Sec. No. 3	463+00	0.2	3.1	5.5	11.8	8.2	4.2
	475+25	3.8	1.1	4.2	3.8	2.5	11.1
Sec. No. 2	490+50	8.9	6.5	11.1	9.1	13.1	7.8
	500+30	1.1	7.5	1.8	0.2	9.8	5.1
Sec. No. 1	512+75	3.5	6.5	22.2	1.8	2.2	8.9
	523+00	4.2	4.2	1.5	6.9	9.5	18.9
	538+75	12.2	9.5	13.5	1.1	9.5	9.1
	547+00	2.9	1.1	5.5	5.5	2.2	0.2
	559+00	5.1	9.1	1.1	0.5	8.5	3.1
Std. Sec.	567+50	1.5	7.1	11.8	15.1	4.5	13.1
	579+50	6.5	5.1	2.5	4.5	2.2	1.1
	591+50	3.1	12.5	3.8	7.1	6.5	0.5
	600+40	3.1	0.2	7.8	3.8	2.5	0.2
	611+50	4.5	1.8	9.5	18.2	10.2	5.1
	620+50	8.2	8.2	8.5	3.8	6.5	5.1
Sec. No. 2	634+00	1.5	11.5	9.8	23.1	8.9	2.2
	647+00	10.2	1.5	5.8	5.5	16.2	7.5
Sec. No. 3	661+00	10.9	11.5	12.9	12.9	5.5	10.9
	669+75	2.9	14.9	10.2	4.9	1.5	8.2
Sec. No. 4	687+50	0.2	2.5	9.5	14.9	7.8	0.9
Sec. No. 5	698+50	18.9	7.1	17.5	16.2	4.2	12.2
	703+75	2.2	4.5	11.5	5.1	11.5	4.2
Sec. No. 6	710+75	10.9	1.1	5.1	13.1	2.9	6.5
	720+70	3.1	8.5	6.5	4.9	5.1	7.8
Sec. No. 7	725+80	6.9	4.2				

TABLE VIII.- TEMPERATURE OF PAVEMENT CONCRETE DURING THE HARDENING PERIOD.

Station	Location	Time	Temperature Concrete, F.	Temperature Air, F.
692+40.0	8 ft. rt. C.L.	9:00 a.m.	82 [a]	79
		12:00 m.	89	87
		3:00 p.m.	96	86
		6:00 p.m.	92	84
		9:00 p.m.	88	74
		7:00 a.m.	82	82
661+84.0	8 ft. rt. C.L.	12:00 m.	90 [b]	84
		3:00 p.m.	98	86
		6:00 p.m.	101	80
		7:00 p.m.	98	76
		8:00 p.m.	95	74
		9:00 p.m.	93	68
624+18.5	7 ft. rt. C.L.	3:00 p.m.	98 [c]	93
		6:00 p.m.	101	84
		7:00 p.m.	102	81
		8:00 p.m.	100	80
		8:30 p.m.	99	77
		9:00 p.m.	98	76
		9:30 p.m.	97	76
		10:00 p.m.	96	74

[a] Broom or final finish July 15, 1940.
[b] Broom or final finish July 18, 1940.
[c] Broom or final finish July 22, 1940.

IX. U.S. WEATHER BUREAU REPORT

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

Special Observer's Meteorological Record

Month of July, 1940. Station 1 Mi. West of Owensboro, Ky., (Daviess County) on U.S. Route 60.

Date	Temperature		Precipitation			Wind Direction at Time of Observation	State of Weather at Time of Observation
	Maximum	Minimum	Time of Beginning	Time of Ending	Amount inches		
1	89	61				S.E.	Clear
2	85	64	D.N.	D.N.	1.21	S.	Cloudy
3	81	60				S.W.	Clear
4	82	58				E.	Clear
5	84	57				S.E.	Clear
6	86	58				E.	P. Cloudy
7	84	62				S.E.	Cloudy
8	80	64				S.	Cloudy
9	87	65				S.E.	Clear
10	91	65				S.	Clear
11	89	66				S.	Clear
12	85	67	D.N.	11 a.m.	0.70	N.W.	Cloudy
13	83	55			0.06	N.W.	Clear
14	84	55				S.	Clear
15	88	62				S.W.	P. Cloudy
16	78	68	9 a.m.	11 a.m.	Trace	N.	P. Cloudy
17	81	59			1.15	N.E.	Clear
18	86	59				S.E.	Clear
19	88	66				S.	Clear
20	89	66				S.	Clear
21	92	68				S.E.	Clear
22	92	70				S.	Clear
23	94	71			Trace	S.	Clear
24	93	71				S.	Clear
25	96	70				S.W.	Clear
26	96	71				S.	Clear
27	96	71				S.	Clear
28	96	71				S.	Clear
29	97	71				S.W.	Clear
30	99	72			Trace	S.	Clear
31	95	70				S.	Clear

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Special Observer's Meteorological Record

Month of August, 1940. Station 1 Mi. West of Owensboro, Ky. (Daviess County) on U.S. Route 60.

Date	Temperature		Precipitation			Wind Direction at Time of Observation	State of Weather at Time of Observation
	Maximum	Minimum	Time of Beginning	Time of Ending	Amount inches		
1	93	70				N.E.	Cloudy
2	92	65				N.E.	Clear
3	93	66				S.	Clear
4	92	68				S.E.	P. Cloudy
5	94	66				S.	Clear
6	86	70				S.E.	Clear
7	90	66			Trace	S.	Clear
8	92	65				S.E.	Cloudy
9	91	64				E.	Clear
10	84	70				S.E.	Cloudy
11	92	70	5 p.m.		Trace	S.E.	P. Cloudy
12	95	73		D.N.	0.07	N.E.	Clear
13	84	73			Trace	N.E.	Cloudy
14	94	64			Trace	S.	Clear
15	94	67				S.E.	Clear
16	95	68				S.E.	Clear
17	97	67	2:30 pm.	4 p.m.		S.	Clear
18	85	68			1.46	S.E.	Clear
19	76	59		D.N.	0.10	S.E.	Clear
20	77	55				N.	P. Cloudy
21	79	55				N.E.	Clear
22	82	49				N.E.	Clear
23	84	54				S.E.	Clear
24	84	60				S.	Clear
25	89	71				S.	Clear
26	91	66				S.W.	P. Cloudy
27	89	71				S.	Cloudy
28	88	66	11 a.m.		0.17	S.E.	Cloudy
29	84	67			1.00	S.E.	P. Cloudy
30	86	66			0.07	S.	Cloudy
31	84	60		D.N.	0.15	S.W.	Clear

X. STATIONING OF PROJECT

X. STATIONING OF PROJECT

Beginning of project - - - - - - - - - - station 397+49.4
End of project - - - - - - - - - - - - station 737+00.0
Length - - - - - - - - - - - - - - - 33950.6 feet
Deduction for bridges
station 581+02.0 to station 582+67.0 --- 165.0 feet
station 586+61.0 to station 588+26.0 --- 165.0 feet
station 595+01.0 to station 596+66.0 --- 165.0 feet
station 601+14.5 to station 602+99.5 --- 185.0 feet
station 609+17.5 to station 610+82.5 --- 165.0 feet
Net length - - - - - - - - - - - - - - - - - - - 33105.6 feet
Net length - - - - - - - - - - - - - - - - - - - 6.27 miles

STATIONING OF EXPERIMENTAL SECTIONS

Begin Section No. 7 - - - - - - - - - - - - - - - - station 397+49.4
Begin subsections for measurements joint No. 1 -- station 403+61
Temperature well 7 feet right of C. L. -- station 406+91
End subsections for measurements joint No. 31 -- station 409+61
End Section No. 7 - - - - - - - - - - - - - - - - - station 410+21

Begin Section No. 6 - - - - - - - - - - - - - - - - station 410+21
Begin subsections for measurements joint No. 1 -- station 410+81
Temperature well 7 feet right of C. L. -- station 412+91
End subsections for measurements joint No. 11 -- station 416+81
End Section No. 6 - - - - - - - - - - - - - - - - - station 425+21

Begin Section No. 5 - - - - - - - - - - - - - - - - station 425+21
Begin subsections for measurements joint No. 1 -- station 433+61
Temperature well 7 feet right of C. L. -- station 437+11
End subsections for measurements joint No. 31 -- station 439+61
End Section No. 5 - - - - - - - - - - - - - - - - - station 440+01

Begin Section No. 4 - - - - - - - - - - - - - - - - station 440+01
Begin subsections for measurements joint No. 1 -- station 448+02
Temperature well 7 feet right of C. L. -- station 451+12
End subsections for measurements joint No. 31 -- station 454+02
End Section No. 4 - - - - - - - - - - - - - - - - - station 455+02

Begin Section No. 3 - - - - - - - - - - - - - - - - station 455+02
Begin subsections for measurements joint No. 1 -- station 462+00
Temperature well 7 feet right of C. L. -- station 464+10
End subsections for measurements joint No. 41 -- station 470+00
End Section No. 3 - - - - - - - - - - - - - - - - - station 480+00

Begin Section No. 2 - - - - - - - - - - - - - - - - station 480+00
Begin subsection for measurements joint No. 1 -- station 502+00
Temperature well 7 feet right of C. L. -- station 506+10
End subsection for measurements joint No. 41 -- station 510+00
End Section No. 2 - - - - - - - - - - - - - - - - - station 510+00

Begin Section No. 1 - - - - - - - - - - - - - - - - - station 510+00
Begin section for measurements joint No. 1 ---- station 510+25
joint No. 10 ---- station 512+05
joint No. 13 ---- station 513+45
Temperature well 7 feet right of C. L. ---- station 517+54
joint No. 53 ---- station 521+43
joint No. 56 ---- station 556+00
End section for measurements joint No. 66 ---- station 558+00
End Section No. 1 - - - - - - - - - - - - - - - - - ---- station 560+00

Begin Standard Section - - - - - - - - - - - - - - -- station 560+00
Begin subsections for measurements joint No. 1 -- station 567+61
Temperature well 7 feet right of C. L. -- station 573+77
End subsections for measurements joint No. 41 -- station 579+62
End Standard Section - - - - - - - - - - - - - - -- station 630+00

Begin Section No. 2 - - - - - - - - - - - - - - - - station 630+00
End Section No. 2 - - - - - - - - - - - - - - - - station 655+00

Begin Section No. 3 - - - - - - - - - - - - - - - - station 655+00
End Section No. 3 - - - - - - - - - - - - - - - - station 680+00

Begin Section No. 4 - - - - - - - - - - - - - - - - station 680+00
End Section No. 4 - - - - - - - - - - - - - - - - station 695+00

Begin Section No. 5 - - - - - - - - - - - - - - - - station 695+00
End Section No. 5 - - - - - - - - - - - - - - - - station 710+00

Begin Section No. 6 - - - - - - - - - - - - - - - - station 710+00
End Section No. 6 - - - - - - - - - - - - - - - - station 725+00

Begin Section No. 7 - - - - - - - - - - - - - - - - station 725+00
End Section No. 7 - - - - - - - - - - - - - - - - station 737+00

XI. ILLUSTRATIONS

Fig. 1.- Batching equipment, Owensboro, Ky.

Fig. 2.- Batching equipment, Owensboro, Ky.

Fig. 3.- Five tooth scarifier pulled by Caterpillar and Allis-Chalmers diesel tractors operating at station 404+00.

Fig. 4.- Austin-Western No. 10 grader operating at station 410+00.

Fig. 5.- Cleveland Form grader operating at station 532+00.

Fig. 6.- R. B. Power Finegrader operating at station 660+00.

Fig. 7.- Huber Roller (5 tons) operating at station 663+00.

Fig. 8.- Completed Subgrade, stations 664+00 to 669+00.

Fig. 9.- Completed subgrade, stations 530+00 to 540+00.

Fig. 10.- Equipment train, paver operating at station 708+00.

Fig. 11.- Koehring 27-E Paver operating at station 668+60.

Fig. 12.- Equipment train, paver operating at station 663+00.

Fig. 13.- Equipment train, paver operating at station 662+00.

Fig. 14.- Completed subgrade, stations 539+00 to 534+00.

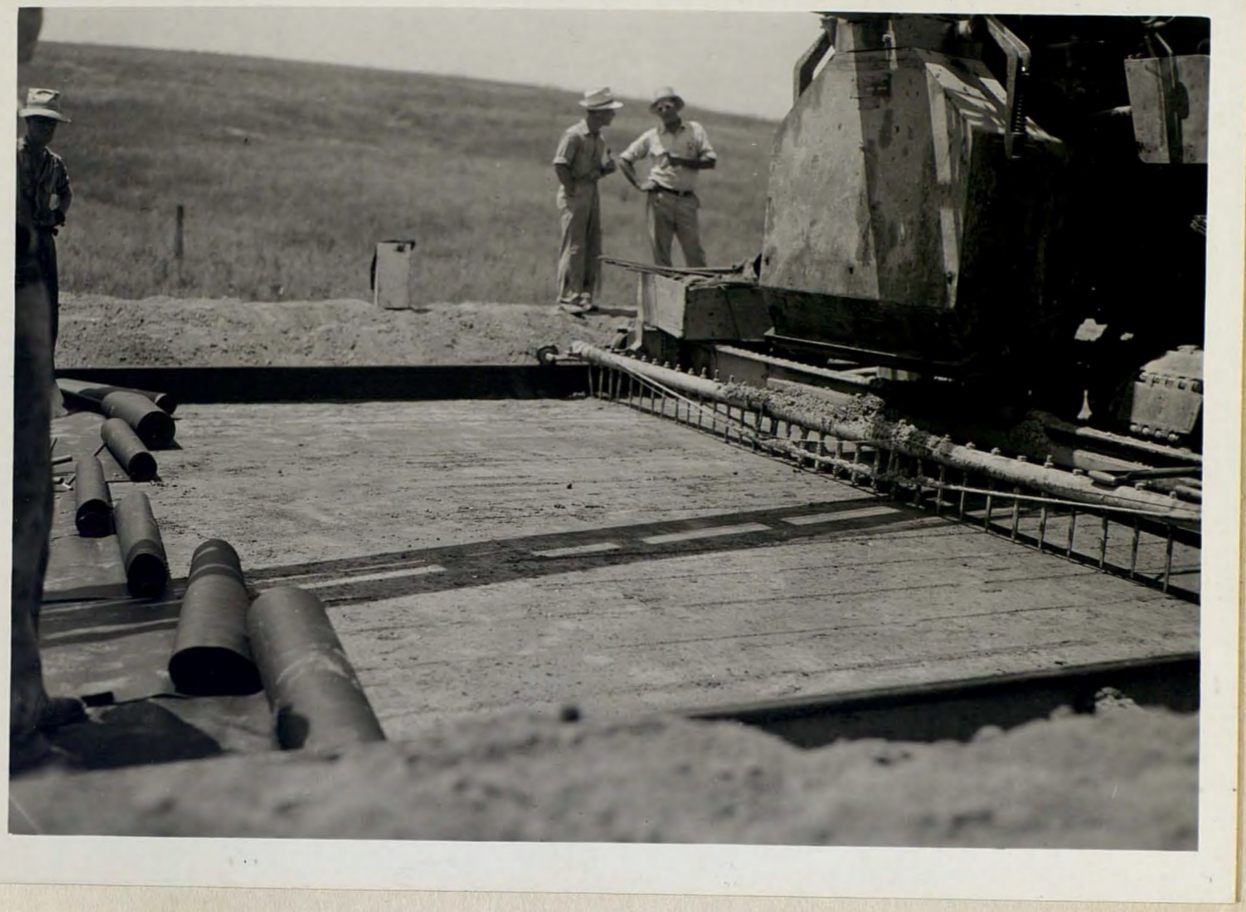

Fig. 15.- Completed subgrade before placing subgrade paper, station 539+50.

Fig. 16.--Completed installation of Laclede Welded Dowel Spacer and dowels at contraction joint, station 436+81.

Fig. 17.-Completed installation of Laclede Welded Dowel Spacer, dowels, and premoulded fiber joint filler at expansion joint, station 668+80.

Fig. 18.- Placing of concrete by hand around dowel bars at expansion joint, station 668+80.

Fig. 19.- Placing of concrete by hand around dowel bars at expansion joint, station 668+80.

Fig. 20.- Spreading concrete by hand in front of finishing machine, and vibrator operating alongside form, station 540+00.

Fig. 21.- Spreading concrete by hand in front of finishing machine, station 663+00.

Fig. 22.- Concrete roll on front screed second pass of finishing machine. Front screed flat, rear screed not operating, removing crown from pavement on superelevated curve, station 711+15.

Fig. 23.- Mortar roll on rear screed of finishing machine, station 668+00.

Fig. 24. - Mortar roll on rear screed of finishing machine, station 667+50.

Fig. 25.- Cutting contraction joint with steel T beam cutter, station 470+40.

Fig. 26.- Installing premoulded fiber contraction joint filler, station 470+40.

Fig. 27. - Forming weakened plane contraction joint station 443+81 by inserting two steel strips (1½ in. x ¾ in. x 10 ft.) 1/4 in. below surface. Joint is then edged and steel removed. No pre-moulded fiber used, joint poured with OA-2 crack and joint filler throughout entire depth. This method used on contraction joints only, stations 397+49.4 to 450+21.

Fig. 28.- Contraction joint after insertion of steel strips, station 438+21.

Fig. 29.- Kochring longitudinal finishing machine operating at station 666+00.

Fig. 30.- Pavement poured during a.m. covered with burlap and being kept wet by sprinkling, stations 662+00 to 667+19,6. Previous days pour in background covered with Sisalkraft curing paper.

Fig. 31.- Testing surface for irregularities with 10 ft. metal straightedges, station 663+00.

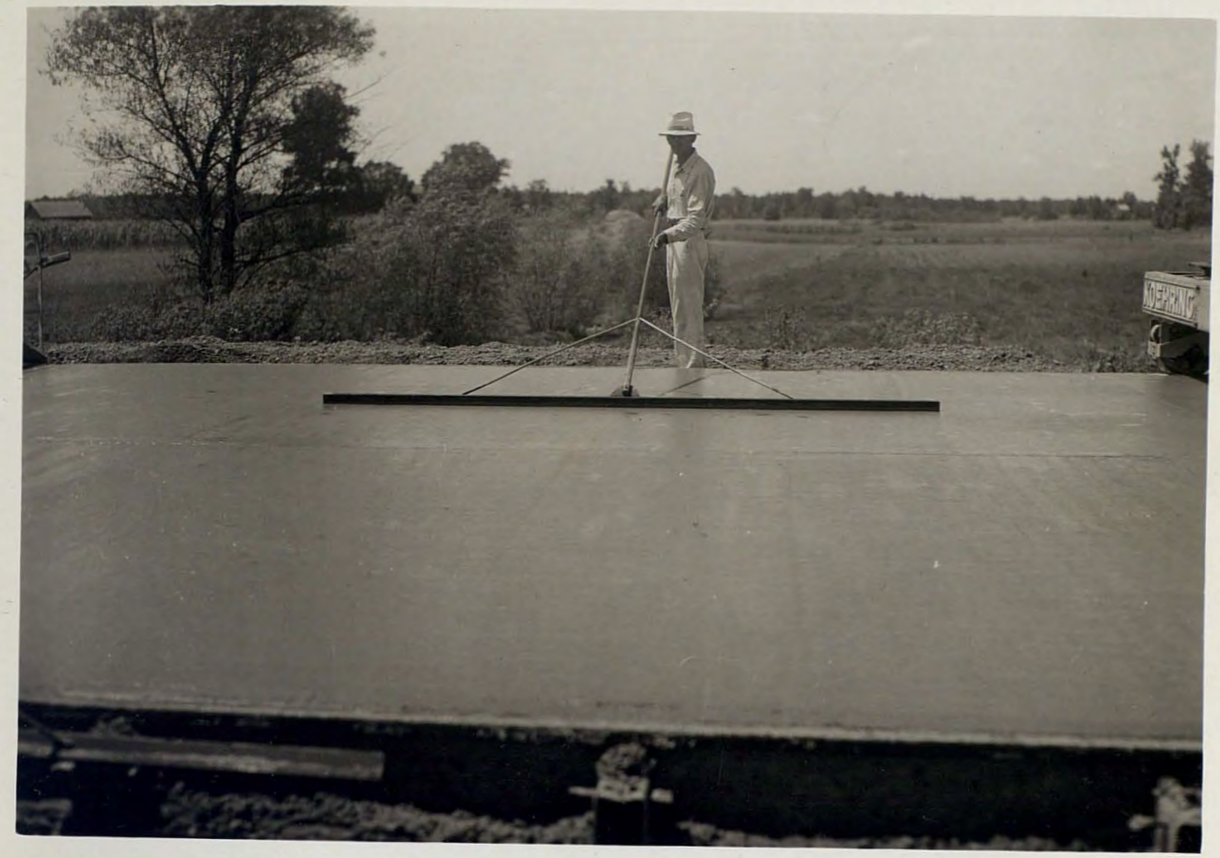

Fig. 32.- Testing surface for irregularities with 10 ft. metal straightedge, station 516+00.

Fig. 33.- Final belting of surface with bowstring rubber belt (width 8 in.), station 446+00.

Fig. 34.- Completed contraction joint (width 3/4 in.), station 666+00.

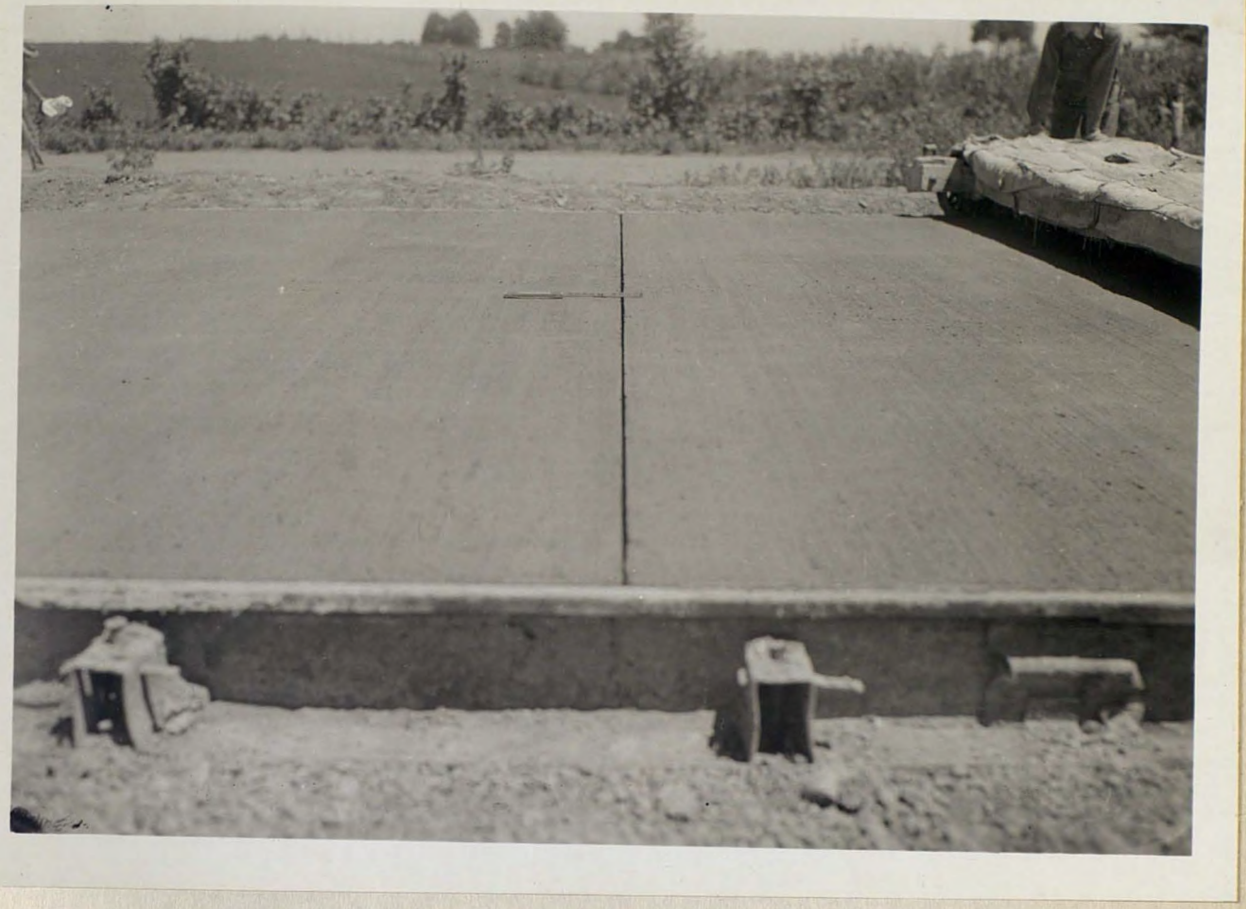

Fig. 35.- Completed contraction joint (width 1/2 in.), station 433+01.

Fig. 36.- Brooming of surface, station 512+50.

Fig. 37.- Pavement poured during run covered with burlap and kept wet by sprinkling, stations 513+00 to 521+24.

Fig. 38.- Completed expansion joint, station 432+41.

Fig. 39.- Completed contraction joint (width 3/4 in.), station 514+05.

Fig. 40.- Testing completed pavement for surface irregularities at construction joint, station 667+19.6.

Fig. 41.- Placing Sisalkraft curing paper 8:20 a.m. of the day following the placing of the concrete, station 667+50.
Note: Workman on right thoroughly wetting surface before apolication of curing paper.

Fig. 42.- Placing Sisalkraft curing paper 7:45 a.m. of the day following the placing of the concrete, station 669+75.

Fig. 43.- Removing curing paper, station 657+00.

Fig. 44.- Removing curing paper, station 655+00.

Fig. 45.- Completed pavement, stations 483+00 to 420+00.

Fig. 46.- Completed pavement, stations 544+00 to 490+00.

Fig. 47.- Completed pavement, stations 635+00 to 556+00.

Fig. 48.- Completed pavement, stations 653+00 to 638+00.

Fig. 49. - Completed pavement, stations 709+00 to 705+00.

Campbell Hailey

Fig. 50.- Measuring the change in width of the joint, station 572+42.

XII. JOINT FILLER DEPTH MEASUREMENTS.

(Distance in inches of premoulded joint filler below surface of pavement.)

Sta.	Type	Lt.	C.L.	Rt.
397+61	Ex.	5/16	0	1/2
397+81	C	1-15/16	2	1-15/16
398+01	C	2	1-7/8	1-15/16
398+21	C	1-13/16	2-1/16	1-3/4
398+41	C	1-3/4	2-1/8	1-13/16
398+61	C	1-3/4	2-3/16	1-7/8
398+81	Ex.	3/8	0	3/8
399+01	C	1-5/8	2-1/16	2
399+21	C	1-15/16	2-1/4	1-3/4
399+41	C	1-3/4	2-1/16	2-1/8
399+61	C	2	2-1/4	1-7/8
399+81	C	1-3/4	2-1/8	1-7/8
400+01	Ex.	7/8	3/4	5/8
400+21	C	1-15/16	1-7/8	2
400+41	C	1-3/4	2-1/16	1-3/4
400+61	C	1-7/8	2-1/8	2-1/4
400+81	C	1-15/16	2	1-7/8
401+01	C	1-3/4	1-15/16	2-1/4
401+21	Ex.	1-3/16	7/8	3/4
401+41	C	1-3/4	2"	1-3/4
401+61	C	1-7/8	2"	1-13/16
401+81	C	1-7/8	2"	2-3/16
402+01	C	1-3/4	2-1/2	1-1/2
402+21	C	2-1/16	2-1/8	2-1/4
402+41	Ex.	7/8	7/8	3/4
402+61	C	1-13/16	2"	1-15/16
402+81	C	2"	2"	1-7/8
403+01	C	2-1/8	2-1/8	2"
403+21	C	1-15/16	2-1/8	2"
403+41	C	2-1/4	2-7/16	2-1/8
403+61	Ex.	15/16	1"	13/16
403+81	C	1-15/16	2"	2"
404+01	C	2-1/16	2-1/8	2-1/16
404+21	C	1-15/16	1-3/4	1-7/8
404+41	C	1-7/8	1-15/16	2-1/16
404+61	C	2-1/4	2-3/16	1-7/8
404+81	Ex.	1"	1-3/8	7/8
405+01	C	2-3/16	1-7/8	2"
405+21	C	2-1/16	2"	2-1/16
405+41	C	2"	2-1/16	2"
405+61	C	1-7/8	2-1/8	2"
405+81	C	1-3/4	2-3/16	2"
406+01	Ex.	3/4	1/2	5/8
406+21	C	1-15/16	2-1/16	2-3/16
406+41	C	2"	1-7/8	2"
406+61	C	1-15/16	2-1/8	2-9/16
406+81.4	Const. Jt.			
407+01	C	2"	2-1/16	2-1/8
407+21	Ex.	5/8	3/4	13/16
407+41	C	2-1/8	2-1/16	2"
407+61	C	2-1/16	2"	2-3/16
407+81	C	2-1/16	2-3/16	2-1/16
408+01	C	1-15/16	1-7/8	1-15/16
408+21	C	1-3/4	1-15/16	2-1/8
408+41	Ex.	3/4	1/2	1/2
408+61	C	2"	2-3/4	2-1/8
408+81	C	1-7/8	2-1/16	1-15/16
409+01	C	1-3/4	1-15/16	2"

Sta.	Type	Lt.	C.L.	Rt.
409+21	C	1-15/16	2-1/8	2-1/8
409+41	C	2-1/16	2"	1-7/8
409+61	Ex.	3/4	1/2	9-16
409+81	C	1-15/16	1-7/8	1-15/16
410+01	C	2-1/16	2-1/8	2-1/2
410+21	C	1-3/4	1-15/16	2-1/8
410+81	Ex.	3/4	5/8	5/8
411+41	C	1-13/16	1-7/8	1-7/8
412+01	Ex.	13/16	1/2	1/2
412+61	C	1-3/4	1-7/8	1-7/8
413+21	Ex.	7/8	13/16	3/4
413+81	C	2"	1-13/16	2-1/16
414+41	Ex.	1/2	5/8	1/2
415+01	C	1-7/8	2"	1-7/8
415+61	Ex.	5/8	1/2	3/8
416+21	C	2"	1-7/8	1-3/4
416+81	Ex.	1/2	1/2	7/16
417+41	C	1-7/8	1-7/8	1-13/16
418+01	Ex.	3/4	7/16	3/8
418+61	C	1-7/8	2"	1-3/4
419+21	Ex.	1/2	5/8	5/8
419+81.0	Const. Jt.			
420+41	Ex.	1/2	3/8	3/8
421+01	C	1-7/8	2-1/4	2"
421+61	Ex.	5/8	13/16	5/8
422+21	C	1-7/8	1-13/16	1-7/8
422+81	Ex.	13/16	5/8	1/2
423+41	C	2-3/16	1-7/8	2-1/2
424+01	Ex.	3/4	1/4	9/16
424+61	C	1-7/8	2-1/16	1-7/8

Sta.	Type	Lt.	C.L.	Rt.
425+21	Ex.	15/16	1/2	7/16
425+41	C	1-15/16	2"	2-1/16
425+61	C	1-7/8	1-3/4	1-3/4
425+81	C	2-3/16	1-15/16	2-1/16
426+01	C	1-15/16	2"	1-7/8
426+21	C	1-7/8	1-7/8	2-1/16
426+41	Ex.	3/4	1/2	5/8
426+61	C	1-15/16	1-15/16	1-7/8
426+81	C	1-7/8	2-1/16	1-15/16
427+01	C	2-1/4	2"	1-7/8
427+21	C	1-7/8	2-1/16	1-7/8
427+41	C	2"	1-7/8	2-1/8
427+61	Ex.	3/4	9/16	3/8
427+81	C.	1-7/8	1-3/4	1-3/4
428+01	C	1-15/16	2"	1-7/8
428+21	C	2-1/2	2"	1-7/8
428+41	C	1-7/8	2"	2"
428+61	C	1-15/16	1-7/8	1-13/16
428+81	Ex.	3/4	9/16	1/2
429+01	C	1-13/16	1-3/4	1-7/8
429+21.	Const. Jt.			
429+41	C	2-1/16	2"	1-7/8
429+61	C	1-15/16	2"	1-11/16
429+81	C	1-3/4	1-3/4	1-15/16
430+01	Ex.	11/16	7/16	9/16
430+21	C	1-15/16	1-7/8	2"
430+41	C	1-7/8	1-15/16	2-1/16
430+61	C	2-1/8	2-1/8	1-13/16
430+81	C	2-1/16	1-3/4	1-7/8
431+01	C	1-7/8	1-3/4	1-7/8
431+21	Ex.	15/16	5/8	1/2
431+41	C	1-13/16	1-3/4	1-13/16
431+61	C	1-5/8	1-3/4	1-3/4

Sta.	Type	Lt.	C.L.	Rt.
431+81	C	1-3/4	1-13/16	1-7/8
432+01	C	1-7/8	1-15/16	1-7/8
432+21	C	2-1/16	1-7/8	1-13/16
432+41	Ex.	3/4	1/2	5/8
432+61	C	1-15/16	1-3/4	1-3/4
432+81	C	2"	2"	1-13/16
433+01	C	2"	1-15/16	2-1/16
433+21	C	1-7/8	1-3/4	1-7/8
433+41	C	1-3/4	1-5/8	1-3/4
433+61	Ex.	1/2	1/2	7/8
433+82.5	Const. Jt.			
434+01	C	1-7/8	1-7/8	1-3/4
434+21	C	1-3/4	2"	2-1/16
434+41	C	1-3/4	1-7/8	1-5/8
434+61	C	1-7/8	1-15/16	1-15/16
434+81	Ex.	5/8	9/16	3/4
435+01	C	1-15/16	1-7/8	1-15/16
435+21	C	1-3/4	1-13/16	1-7/8
435+41	C	1-5/8	2"	1-15/16
435+61	C	1-7/8	1-15/16	1-7/8
435+81	C	1-7/8	1-13/16	2"
436+01	Ex.	3/4	3/8	3/4
436+21	C	1-3/4	1-15/16	2"
436+41	C	2-1/8	1-3/4	2-1/4
436+61	C	1-15/16	2-1/16	2"
436+81	C	1-3/4	2-1/16	1-13/16
437+01	C	1-3/4	1-7/8	1-5/8
437+21	Ex.	7/8	1/2	3/4
437+41	C	1-3/4	1-13/16	1-1/2
437+61	C	1-7/8	1-15/16	2"
437+81	C	1-13/16	1-13/16	1-3/4
438+01	C	1-3/4	1-3/4	1-15/16
438+21	C	1-7/8	1-7/8	2"
438+41	Ex.	5/8	7/16	9-/6
438+61	C	1-3/4	1-13/16	1-3/4
438+81	C	1-7/8	1-3/4	1-13/16
439+01	C	1-3/4	1-7/8	1-7/8
439+21	C	1-13/16	1-15/16	1-13/16
439+41	C	1-3/4	1-3/4	2-1/8
439+61	Ex.	7/8	9/16	5/8
439+81	C	1-7/8	1-7/8	2-3/16
440+01	C	1-13/16	1-7/8	1-3/4
440+21	C	1-7/8	1-15/16	2-1/4
440+41	C	1-5/8	1-15/16	1-9/16
440+61	C	1-3/4	1-3/4	1-15/16
440+81	Ex.	3/4	3/8	1/2
441+01	C	1-11/16	1-7/8	2"
441+21	C	1-3/4	1-3/4	2"
441+41	C	2-1/8	1-7/8	2-3/16
441+61	C	1-5/8	1-7/8	1-5/8
441+81	C	1-13/16	1-7/8	1-13/16
442+01	Ex.	11/16	1/2	5/8
442+21	C	1-7/8	2-1/8	1-15/16
442+41	C	2"	2"	2-1/16
442+61	C	1-7/8	2"	1-7/8
442+81	C	2"	1-7/8	1-3/4
443+01	C	1-3/4	2-3/16	1-3/4
443+21	Ex.	5/8	3/8	1/2
443+41	C	1-7/8	2"	1-3/4
443+61	C	1-13/16	2"	1-7/8
443+81	C	2"	2"	1-7/8
444+01	C	2-1/16	1-7/8	1-15/16
444+21	C	2"	1-3/4	1-3/4
444+41	Ex.	1/2	9/16	1/2
444+61	C	1-7/8	1-15/16	2"

Sta.	Type	Lt.	C.L.	Rt.
444+81	C	2"	1-15/16	1-7/8
445+01	C	2-1/8	2"	1-13/16
445+21	C	2"	2"	1-15/16
445+41	C	1-7/8	2-3/16	2-1/16
445+61	Ex.	11/16	9/16	5/16
445+81	C	2"	2"	2"
446+01	C	2"	2"	1-15/16
446+21	C	2-1/8	2"	2"
446+41	C	1-7/8	1-15/16	1-13/16
446+61	C	1-15/16	2-1/8	1-7/8
446+81	Ex.	7/8	1"	5/8
447+01	C	2"	1-3/4	1-7/8
447+22	C	2-1/8	2"	1-7/8
447+42	C	1-7/8	2-1/16	2"
447+62	C	2"	1-15/16	1-15/16
447+82	C	2"	1-7/8	2"
447+90.5	Const. Joint			
448+02	Ex.	13/16	7/16	11/16
448+22	C	1-7/8	2"	1-7/8
448+42	C	1-5/8	2-5/16	1-15/16
448+62	C	2-1/4	2"	2"
448+82	C	1-13/16	1-7/8	1-3/4
449+02	C	1-7/8	2"	1-5/8
449+22	Ex.	13/16	1/2	9/16
449+42	C	2"	2"	1-13/16
449+62	C	1-11/16	2-1/8	2"
449+82	C	2"	1-15/16	1-15/16
450+02	C	1-3/4	1-3/4	2"
450+22	C	1-7/8	1-7/8	1-5/8
450+42	Ex.	5/8	1/2	9/16
450+62	C	1/2	3/8	7/16
450+82	C	5/8	3/8	1/2
451+02	C	9/16	7/16	1/2
451+22	C	9/16	1/2	9/16
451+42	C	5/8	11/16	9/16
451+62	Ex.	7/8	3/8	1/2
451+82	C.	7/16	9/16	11/16
452+02	C	9/16	1/2	9/16
452+22	C	13/16	15/16	3/4
452+42	C	11/16	5/8	9/16
452+62	C	7/16	5/8	5/8
452+82	Ex.	5/8	5/16	3/8
453+02	C	3/4	11/16	9/16
453+22	C	1/2	1"	3/4
453+42	C	15/16	7/8	13/16
453+62	C	3/4	11/16	15/16
453+82	C	9/16	13/16	3/4
454+02	Ex.	5/8	5/8	15/16
454+22	C	5/8	13/16	13/16
454+42	C	3/4	13/16	7/8
454+62	C	7/8	13/16	7/8
454+82	C	7/16	3/4	7/8
455+02	C	7/16	1/2	3/4
455+22	C	5/8	15/16	3/4
455+42	C	13/16	9/16	13/16
455+62	C	3/4	3/4	13/16
455+82	C	7/16	13/16	13/16
456+02	C	9/16	5/8	3/4

Sta.	Type	Lt.	C.L.	Rt.
456+22	C	13/16	7/8	3/4
456+42	C	7/8	11/16	7/8
456+62	C	13/16	3/4	11/16
456+82	C	11/16	9/16	9/16
457+02	C	1/2	7/16	3/4
457+22	C	7/8	1"	13/16
457+42	C	3/4	13/16	3/4
457+62	C	13/16	1"	11/16
457+82	C	11/16	5/8	7/8
458+02	Ex.	3/8	5/16	5/16
458+22	C	7/8	15/16	1"
458+42	C	7/8	15/16	7/8
458+62	C	11/16	13/16	7/8
458+82	C	13/16	7/8	1"
459+02	C	7/8	3/4	11/16
459+20	C	11/16	3/4	3/4
459+31.0	Const. Jt.			
459+40	C	5/8	3/4	3/4
459+60	C	1/2	1/2	9/16
459+80	C	11/16	1/2	9/16
460+00	C	11/16	3/4	3/4
460+20	C	7/8	3/4	7/8
460+40	C	1"	7/8	3/4
460+60	C	1/2	9/16	7/8
460+80	C	11/16	7/8	7/8
461+00	C	3/4	1"	7/8
461+20	C	15/16	3/4	13/16
461+40	C	7/8	11/16	15/16
461+60	C	5/8	11/16	13/16
461+80	C	5/8	3/4	3/4
462+00	Ex.	7/16	3/8	7/16
462+20	C	3/4	11/16	13/16
462+40	C	9/16	9/16	11/16
462+60	C	13/16	11/16	3/4
462+80	C	11/16	3/4	7/8
463+00	C	3/4	3/4	3/4
463+20	C	7/16	3/4	13/16
463+40	C	3/4	5/8	1/2
463+60	C	7/16	5/8	3/4
463+80	C	13/16	7/8	13/16
464+00	C	5/8	3/4	7/8
464+20	C	1/2	7/8	3/4
464+40	C	13/16	15/16	7/8
464+60	C	9/16	1/2	3/4
464+80	C	13/16	7/8	1"
465+00	C	13/16	7/8	7/8
465+20	C	5/8	5/8	11/16
465+40	C	3/4	11/16	11/16
465+60	C	13/16	7/8	7/8
465+80	C	3/4	7/8	3/4
466+00	Ex.	9/16	1/2	1/2
466+20	C	13/16	11/16	7/16
466+40	C	7/8	13/16	13/16
466+60	C	13/16	7/8	15/16
466+80	C	13/16	13/16	13/16
467+00	C	3/4	15/16	15/16
467+20	C	11/16	13/16	7/8
467+40	C	7/8	3/4	7/8

Sta.	Type	Lt.	C.L.	Rt.
467+60	C	13/16	7/8	3/4
467+80	C	7/8	3/4	7/8
468+00	C	15/16	15/16	15/16
468+20	C	13/16	15/16	15/16
468+40	C	7/8	1/2	1"
468+60	C	11/16	7/16	7/8
468+80	C	11/16	7/8	7/8
469+00	C	3/4	3/4	11/16
469+21.4 Const. Jt.				
469+40	C	11/16	9/16	13/16
469+60	C	7/16	11/16	9/16
469+80	C	13/16	13/16	1/2
470+00	Ex.	11/16	1/4	5/16
470+20	C	11/16	3/4	11/16
470+40	C	1"	5/8	7/8
470+60	C	3/4	13/16	3/4
470+80	C	3/4	7/8	3/4
471+00	C	3/4	3/4	5/8
471+20	C	13/16	3/4	3/4
471+40	C	13/16	3/4	9/16
471+60	C	1/2	11/16	5/8
471+80	C	13/16	5/8	13/16
472+00	C	3/4	7/8	5/8
472+20	C	1/2	11/16	11/16
472+40	C	3/4	3/4	5/8
472+60	C	5/8	13/16	5/8
472+80	C	7/8	1/2	7/8
473+00	C	7/8	1"	3/4
473+20	C	7/8	3/4	7/8
473+40	C	5/8	7/8	3/4
473+60	C	1/2	7/8	11/16
473+80	C	1/2	3/4	7/8
474+00	Ex.	3/8	1/4	3/8
474+20	C	7/8	7/8	3/4
474+40	C	7/8	3/4	3/4
474+60	C	3/4	15/16	15/16
474+80	C	13/16	13/16	5/8
475+00	C	11/16	9/16	5/8
475+20	C	3/4	5/8	3/4
475+40	C	3/4	15/16	15/16
475+60	C	7/8	3/4	3/4
475+80	C	13/16	5/8	15/16
476+00	C	15/16	13/16	1"
476+20	C	11/16	3/4	1"
476+40	C	5/8	15/16	13/16
476+60	C	15/16	1"	1-1/8
476+80	C	3/4	1-5/16	15/16
477+00	C	15/16	3/4	3/4
477+20	C	13/16	1/2	7/8
477+40	C	15/16	1"	7/8
477+60	C	5/8	1"	7/8
477+80	C	13/16	13/16	11/16
478+00	Ex.	1/2	3/8	7/16
478+20	C	7/8	1"	1"
478+40	C	7/8	1"	1"
478+60	C	15/16	7/8	5/8
478+80	C	3/4	1"	13/16
479+00	C	7/8	7/8	3/4
479+20	C	1"	1"	3/4

Sta.	Type	Lt.	C.L.	Rt.
479+40	C	13/16	1-3/16	1"
479+60	C	15/16	15/16	13/16
479+80	C	1"	1"	1"
480+00	C	5/8	1"	3/4
480+20	C	5/8	7/8	3/4
480+40	C	7/8	7/8	13/16
480+60	C	5/8	3/4	3/4
480+80	C	5/8	3/4	1/2
481+00	C	9/16	1"	1"
481+20	C	3/4	5/8	3/4
481+40	C	7/8	1"	1"
481+60	C	13/16	1"	1"
481+80	C	7/8	1"	5/8
482+00	C	5/8	3/4	5/8
482+20	C	9/16	3/4	5/8
482+32.3 Const. Jt.				
482+40	C	3/4	3/4	7/8
482+60	C	11/16	3/4	9/16
482+80	C	13/16	1"	3/4
483+00	C	9/16	3/4	3/4
483+20	C	3/4	3/4	13/16
483+40	C	11/16	13/16	7/8
483+60	C	3/4	3/4	3/4
483+80	C	11/16	3/4	7/8
484+00	C	11/16	3/4	7/8
484+20	C	13/16	7/8	5/8
484+40	C	13/16	7/8	15/16
484+60	C	13/16	1"	3/4
484+80	C	9/16	11/16	3/4
485+00	C	1/2	11/16	3/4
485+20	C	13/16	13/16	13/16
485+40	C	3/4	13/16	1"
485+60	C	1/2	11/16	5/8
485+80	C	5/8	7/8	5/8
486+00	Ex.	9/16	7/16	1/2
486+20	C	3/4	3/4	13/16
486+40	C	11/16	11/16	13/16
486+60	C	3/4	3/4	5/8
486+80	C	5/8	9/16	9/16
487+00	C	3/4	11/16	3/4
487+20	C	5/8	7/8	1"
487+40	C	9/16	11/16	11/16
487+60	C	5/8	3/4	3/4
487+80	C	3/4	3/4	5/8
488+00	C	7/16	1/4	5/8
488+20	C	7/16	3/4	7/8
488+40	C	5/8	7/8	3/4
488+60	C	1/2	5/8	9/16
488+80	C	5/8	11/16	13/16
489+00	C	1/2	11/16	3/4
489+20	C	1/2	9/16	5/8
489+40	C	3/4	5/8	13/16
489+60	C	3/4	3/4	3/4

Sta.	Type	Lt.	C.L.	Rt.
489+80	C	5/8	5/8	5/8
490+00	C	1/2	3/4	11/16
490+20	C	7/16	1"	11/16
490+40	C	1/2	1"	13/16
490+60	C	3/4	1/2	1"
490+80	C	13/16	15/16	7/8
491+00	C	1/2	5/8	3/4
491+20	C	9/16	13/16	3/4
491+40	C	7/8	1"	7/8
491+60	C	13/16	1"	11/16
491+80	C	7/8	15/16	3/4
492+00	C	11/16	1/2	13/16
492+20	C	5/16	7/8	7/8
492+40	C	3/4	7/8	7/8
492+60	C	15/16	1"	13/16
492+80	C	3/4	1"	13/16
493+00	C	3/4	1"	1"
493+20	C	7/8	7/8	7/8
493+40	C	11/16	3/4	3/4
493+60	C	3/4	1"	13/16
493+80	C	11/16	7/8	3/4
494+00	Ex.	9/16	1/4	9/16
494+20	C	3/4	13/16	3/4
494+40	C	3/4	1"	7/8
494+60	C	13/16	7/8	13/16
494+80	C	15/16	1-1/8"	1"
495+00	C	13/16	1"	11/16
495+20	C	7/8	1"	3/4
495+40	C	5/8	13/16	13/16
495+60	C	3/4	7/8	7/8
495+80	C	11/16	15/16	13/16
496+00	C	3/4	15/16	7/8
496+20	C	7/8	7/8	7/8
496+40	C	3/4	1"	3/4
496+60	C	15/16	7/8	13/16
496+80	C	3/4	1"	15/16
497+00	Const. Jt.			
497+20	C	3/8	9/16	11/16
497+40	C	7/16	1/2	3/4
497+60	C	3/4	5/8	5/8
497+80	C	1/2	7/16	3/4
498+00	C	5/8	5/8	7/8
498+20	C	5/8	11/16	11/16
498+40	C	11/16	5/8	1/2
498+60	C	1"	13/16	13/16
498+80	C	3/4	11/16	3/4
499+00	C	13/16	13/16	11/16
499+20	C	1/2	3/4	5/8
499+40	C	3/4	13/16	13/16
499+60	C	7/16	7/16	3/4
499+80	C	15/16	9/16	11/16
500+00	C	3/4	11/16	7/8
500+20	C	3/4	7/16	11/16
500+40	C	9/16	7/16	13/16
500+60	C	7/16	3/4	3/4
500+80	C	9/16	3/4	13/16
501+00	C	13/16	7/8	5/8
501+20	C	11/16	3/4	3/4

Sta.	Type	Lt.	C.L.	Rt.
501+40	C	9/16	5/8	1"
501+60	C	15/16	13/16	13/16
501+80	C	13/16	15/16	7/8
502+00	Ex.	5/16	3/16	3/8
502+20	C	13/16	11/16	13/16
502+40	C	13/16	11/16	3/4
502+60	C	5/8	5/8	11/16
502+80	C	9/16	13/16	11/16
503+00	C	1/2	7/8	13/16
503+20	C	7/16	11/16	5/8
503+40	C	1/2	5/8	11/16
503+60	C	7/8	11/16	13/16
503+80	C	7/8	3/4	3/4
504+00	C	7/16	1/2	13/16
504+20	C	3/4	9/16	3/4
504+40	C	3/4	9/16	7/8
504+60	C	3/4	3/4	1"
504+80	C	15/16	3/4	15/16
505+00	C	15/16	15/16	1-1/16
505+20	C	7/8	7/8	13/16
505+40	C	3/4	7/8	7/8
505+60	C	7/8	3/4	1-1/16
505+80	C	11/16	15/16	1"
506+00	C	7/8	7/8	3/4
506+20	C	3/4	15/16	11/16
506+40	C	5/8	7/8	11/16
506+60	C	3/4	13/16	15/16
506+80	C	7/8	3/4	13/16
507+00	C	5/8	7/8	13/16
507+20	C	7/8	15/16	7/8
507+40	C	11/16	7/8	13/16
507+60	C	7/8	7/8	1-1/16
507+80	C	7/8	15/16	1-1/16
508+00	C	1"	1-1/8	7/8
508+20	C	1-1/8	1"	1-1/16
508+40	C	3/4	1	13/16
508+60	C	13/16	1-1/16	7/8
508+80.0	Const. Jt.			
509+00	C	5/8	13/16	5/8
509+20	C	5/8	1/2	5/8
509+40	C	5/8	3/4	9/16
509+60	C	5/8	15/16	3/4
509+80	C	11/16	11/16	1/2
510+00	Ex.	11/16	1/8	3/16
510+25	C	7/16	5/8	9/16
510+45	C	5/8	7/8	5/8
510+65	C	3/4	15/16	1/2
510+85	C	11/16	3/4	5/8
511+05	C	13/16	5/8	5/8
511+25	C	9/16	3/4	3/4
511+45	C	3/4	3/4	11/16
511+65	C	9/16	9/16	11/16
511+85	C	1-1/16	7/8	11/16
512+05	C	5/16	9/16	9/16
512+25	C	5/8	1/2	3/4
512+45	C	1-3/16	1-3/16	9/16
512+65	C	3/4	3/4	9/16
512+85	C	7/16	3/8	11/16

Sta.	Type	Lt.	C.L.	Rt.
513+05	C	1-1/8	15/16	9/16
513+25	C	13/16	7/16	3/4
513+45	C	1/2	7/16	3/4
513+65	C	7/16	1/2	9/16
513+85	C	11/16	9/16	13/16
514+05	C	1/2	5/8	5/8
514+25	C	1/2	5/8	3/4
514+45	C	1/2	7/16	5/8
514+65	C	3/4	13/16	3/4
514+85	C	7/16	9/16	5/8
515+05	C	3/4	13/16	3/8
515+24	C	9/16	7/8	3/4
515+44	C	3/4	1-1/8	11/16
515+64	C	5/8	15/16	7/8
515+84	C	11/16	13/16	3/4
516+04	C	1/2	1-1/8	5/8
516+24	C	5/8	1-3/16	3/4
516+44	C	7/8	7/8	13/16
516+64	C	3/4	1-1/16	13/16
516+84	C	7/8	15/16	13/16
517+04	C	5/8	3/4	9/16
517+24	C	13/16	5/8	13/16
517+44	C	3/4	1-1/16	1-1/8
517+64	C	7/8	13/16	7/8
517+84	C	13/16	7/8	1"
518+04	C	3/4	13/16	3/4
518+24	C	7/8	1-3/16	1-1/16
518+44	C	1-1/16	1-1/4	7/8
518+64	C	15/16	7/8	3/4
518+84	C	7/8	1"	1-1/16
519+04	C	7/8	1-3/8	1-1/16
519+24	C	3/4	1-1/8	3/4
519+44	C	3/4	11/16	7/8
519+64	C	13/16	3/4	15/16
519+84	C	5/8	7/8	7/8
520+04	C	13/16	13/16	3/4
520+24	C	13/16	1"	7/8
520+44	C	13/16	1-1/16	3/4
520+64	C	1"	1-1/16	1"
520+84	C	3/4	7/8	13/16
521+04	C	3/4	3/4	7/8
521+24.0 Const. Jt.				
521+43	C	1/2	9/16	5/8
521+63	C	7/16	13/16	5/8
521+83	C	3/4	3/4	11/16
522+03	C	5/8	5/8	11/16
522+23	C	11/16	7/16	5/8
522+43	C	5/16	1/2	1/2
522+63	C	11/16	13/16	3/4
522+83	C	11/16	13/16	11/16
523+03	C	3/4	5/8	9/16
523+23	C	1/4	3/4	13/16
523+43	C	13/16	13/16	5/8
523+63	C	13/16	9/16	3/4
523+83	C	3/4	13/16	5/8
524+03	C	9/16	5/8	3/8
524+23	C	11/16	11/16	5/8
524+43	C	1/2	7/8	7/8

Sta.	Type	Lt.	C.L.	Rt.
524+63	C	5/8	11/16	11/16
524+83	C	11/16	7/16	5/8
525+03	C	3/4	7/8	13/16
525+23	C	7/8	11/16	15/16
525+43	C	3/4	5/8	11/16
525+63	C	5/8	5/8	3/4
525+83	C	1/8	11/16	5/8
526+03	C	1/2	9/16	1/2
526+23	C	1/2	11/16	5/8
526+43	C	3/4	13/16	9/16
526+63	C	1/2	9/16	1/2
526+83	C	9/16	9/16	11/16
527+03	C	7/16	1/2	1/2
527+23	C	9/16	1/2	5/8
527+43	C	7/16	11/16	5/8
527+63	C	3/8	5/8	9/16
527+83	C	1/2	9/16	1/2
528+03	C	3/4	13/16	3/4
528+23	C	7/8	3/4	9/16
528+43	C	11/16	7/8	7/8
528+63	C	13/16	1-1/16	13/16
528+83	C	7/8	15/16	7/8
529+03	C	11/16	7/8	7/8
529+23	C	7/8	3/4	15/16
529+43	C	15/16	13/16	11/16
529+63	C	3/4	7/8	3/4
529+83	C	13/16	3/4	3/4
530+03	C	3/4	1-1/16	13/16
530+23	C	1"	15/16	13/16
530+43	C	7/8	1-3/16	7/8
530+63	C	13/16	13/16	7/8
530+83	C	7/8	9/16	11/16
531+03	C	15/16	1-1/8	15/16
531+23	C	11/16	7/8	7/8
531+43	C	7/8	1-1/8	7/8
531+63	C	13/16	3/8	7/8
531+83	C	1-1/16	7/8	5/8
532+03	C	13/16	13/16	3/4
532+23	C	7/8	1"	7/8
532+43	C	3/4	15/16	7/8
532+63	C	15/16	3/8	15/16
532+83	C	13/16	1/2	13/16
533+03	C	3/4	7/8	9/16
533+23	C	11/16	1"	7/8
533+43	C	9/16	3/8	13/16
533+63	C	7/8	9/16	11/16
533+83	C	11/16	1-1/16	13/16
534+03	C	15/16	13/16	3/4
534+23	C	5/8	3/4	3/4
534+44.0	Const. Jt.			
534+63	C	11/16	5/8	3/4
534+83	C	5/8	1/2	3/4
535+03	C	11/16	5/8	9/16
535+23	C	9/16	3/4	5/16
535+43	C	7/16	1/2	11/16
535+63	C	7/16	9/16	3/4
535+83	C	9/16	7/16	3/4
536+03	C	1/2	5/8	1/2
536+23	C	5/16	13/16	11/16

Sta.	Type	Lt.	C.L.	Rt.
536+43	C	7/16	7/8	13/16
536+63	C	7/16	7/16	5/8
536+83	C	1/2	5/8	11/16
537+03	C	7/16	1/2	13/16
537+23	C	1/2	7/16	1/2
537+43	C	5/8	9/16	5/8
537+63	C	5/8	1/2	5/8
537+83	C	9/16	7/16	1/2
538+03	C	5/8	3/4	5/8
538+23	C	1/2	3/4	5/8
538+43	C	9/16	1/2	13/16
538+63	C	3/4	11/16	1/2
538+83	C	7/16	1/2	3/4
539+03	C	1/2	5/8	3/4
539+23	C	5/8	7/8	3/4
539+43	C	1/2	11/16	11/16
539+63	C	3/4	3/4	9/16
539+83	C	5/8	5/8	1"
540+03	C	5/8	5/8	5/8
540+23	C	1/2	9/16	1/2
540+43	C	5/8	11/16	7/16
540+63	C	3/8	5/8	5/8
540+83	C	3/4	7/8	7/8
541+03	C	3/4	13/16	3/4
541+23	C	7/8	7/8	7/8
541+43	C	1"	15/16	15/16
541+63	C	3/4	7/8	15/16
541+83	C	7/8	7/8	3/4
542+03	C	5/8	5/8	3/4
542+23	C	3/4	3/4	7/8
542+43	C	3/4	7/8	7/8
542+63	C	9/16	1/2	5/8
542+83	C	3/4	1-1/16	1-1/16
543+03	C	7/16	5/8	7/8
543+23	C	1"	7/8	1"
543+43	C	7/8	7/8	7/8
543+63	C	1"	5/8	3/4
543+83	C	7/8	15/16	1-1/8
544+03	C	1-1/4	13/16	7/8
544+22	C	1"	7/8	15/16
544+42	C	1"	13/16	13/16
544+62	C	1"	11/16	13/16
544+82	C	3/4	13/16	3/4
545+02	C	11/16	3/4	11/16
545+22	C	13/16	3/4	1"
545+42	C	7/8	13/16	15/16
545+62	C	13/16	7/8	7/8
545+82	C	15/16	5/8	15/16
546+02	C	3/4	1/2	7/8
546+22	C	3/4	15/16	3/4
546+31.8 Const. Jt.				
546+42	C	7/16	5/8	7/8
546+62	C	1"	5/8	7/8
546+82	C	13/16	7/8	13/16
547+02	C	1"	7/8	7/8
547+22	C	15/16	1"	3/4
547+42	C	3/4	5/8	1"
547+62	C	13/16	5/8	3/4

Sta.	Type	Lt.	C.L.	Rt.
547+82	C	7/8	11/16	7/16
548+02	C	1/2	3/8	1/2
548+22	C	7/8	1"	13/16
548+42	C	3/4	3/4	11/16
548+62	C	13/16	1/2	5/8
548+82	C	3/4	3/4	9/16
549+02	C	7/8	5/8	11/16
549+22	C	1/16	3/4	11/16
549+42	C	13/16	11/16	15/16
549+62	C	7/8	13/16	15/16
549+82	C	5/8	3/4	15/16
550+02	C	5/8	3/4	11/16
550+22	C	1/2	3/4	9/16
550+42	C	13/16	7/8	3/4
550+62	C	3/4	15/16	7/8
550+82	C	5/8	13/16	13/16
551+02	C	1/2	5/8	3/4
551+22	C	3/4	1"	3/4
551+42	C	1/2	5/8	5/8
551+62	C	5/8	1/2	3/4
551+82	C	3/4	3/8	11/16
552+02	C	5/8	3/4	13/16
552+22	C	3/4	7/8	13/16
552+42	C	3/4	5/8	1"
552+62	C	7/8	5/8	11/16
552+82	C	1-1/16	11/16	13/16
553+02	C	3/4	1/2	13/16
553+22	C	13/16	13/16	13/16
553+42	C	5/8	5/8	3/4
553+62	C	5/8	5/8	1"
553+82	C	13/16	3/4	11/16
554+02	C	13/16	11/16	13/16
554+22	C	3/4	7/8	5/8
554+42	C	15/16	1"	13/16
554+62	C	11/16	3/4	7/8
554+82	C	3/4	11/16	3/4
555+02	C	3/4	5/8	3/4
555+20	C	3/4	5/8	3/4
555+40	C	1/2	11/16	13/16
555+60	C	11/16	1/2	11/16
555+80	C	1/2	1/2	3/4
556+00	C	11/16	11/16	13/16
556+20	C	3/4	15/16	13/16
556+40	C	11/16	3/4	13/16
556+60	C	3/4	11/16	1"
556+80	C	3/4	7/8	7/8
557+00	C	15/16	3/4	3/4
557+20	C	9/16	3/4	3/4
557+40	C	7/16	11/16	1/2
557+60.3	Const. Jt.			
557+80	C	11/16	3/4	13/16
558+00	C	5/8	3/8	3/8
558+20	C	3/4	3/4	1/2
558+40	C	1/2	9/16	3/4
558+60	C	5/8	7/8	13/16
558+80	C	5/8	11/16	1"

Sta.	Type	Lt.	C.L.	Rt.
559+00	C	7/16	3/4	3/8
559+20	C	1"	5/8	1/2
559+40	C	7/8	5/8	3/4
559+60	C	3/4	5/8	3/4
559+80	C	15/16	11/16	11/16
560+00	C	5/8	9/16	11/16
560+21	C	9/16	9/16	1/2
560+41	Ex.	3/8	9/16	9/16
560+71	C	5/16	9/16	7/16
561+01	C	7/16	1/2	7/16
561+31	C	1/2	1/2	1/2
561+61	Ex.	5/16	5/16	1/2
561+91	C	3/8	7/16	5/8
562+21	C	1/2	7/16	1/2
562+51	C	3/8	3/8	3/8
562+81	Ex.	3/8	5/16	5/16
563+11	C	1/4	1/2	3/8
563+41	C	1/2	7/16	5/8
563+71	C	1/2	3/4	3/8
564+01	Ex.	5/8	5/16	3/8
564+31	C	1/2	1/2	9/16
564+61	C	3/8	1/2	1/2
564+91	C	9/16	3/4	1/2
565+21	Ex.	1/4	5/16	3/8
565+51	C	5/8	7/16	7/16
565+81	C	3/8	1/2	9/16
566+11	C	1/2	1/2	9/16
566+41	Ex.	1/2	3/8	1/4
566+71	C	7/16	1/2	3/8
567+01	C	7/16	5/8	7/16
567+31	C	5/8	1/2	1/2
567+61	Ex.	3/8	7/16	7/16
567+91	C	5/8	7/16	7/16
568+00.5	Const. Jt.			
568+21	C	1/2	3/8	7/16
568+51	C	1/4	7/16	5/16
568+81	Ex.	3/8	3/8	3/8
569+11	C	3/8	3/8	1/2
569+41	C	1/2	5/16	3/8
569+71	C	1/4	7/16	1/2
570+01	Ex.	3/8	7/16	3/8
570+32	C	1/8	1/8	9/16
570+62	C	3/8	9/16	7/16
570+92	C	5/16	5/16	5/16
571+22	Ex.	1/4	1/4	9/16
571+52	C	3/8	0	7/16
571+82	C	7/16	3/8	5/8
572+12	C	3/8	1/4	6/16
572+42	Ex.	3/4	7/16	7/16
572+72	C	1/4	3/16	7/16
573+02	C	3/8	3/8	1/2
573+32	C	11/16	5/8	1/2
573+62	Ex.	1/2	3/16	1/2
573+92	C	11/16	5/16	3/8
574+22	C	11/16	3/8	1/2
574+52	C	3/8	5/8	5/8
574+82	Ex.	11/16	5/8	1/2
575+12	C	5/8	7/16	9/16

Sta.	Type	Lt.	C.L.	Rt.
575+42	C	1/2	9/16	9/16
575+72	C	3/4	1/2	11/16
576+02	Ex.	9/16	0	3/8
576+32	C	1/2	5/8	13/16
576+62	C	7/16	7/16	1/2
576+92	C	3/8	5/16	13/16
577+22	Ex.	3/4	13/16	3/8
577+52	C	9/16	1/2	1/2
577+82	C	1/2	9/16	11/16
578+12	C	11/16	1/2	3/4
578+42	Ex.	7/16	1/8	5/16
578+72	C	1/2	7/16	9/16
579+02.0	C	7/16	7/16	1/8
			Const.Jt.	
579+32	C	1/8	3/8	3/8
579+62	Ex.	5/16	3/16	3/8
579+92	C	7/16	3/8	5/8
580+22	C	5/8	3/8	1/2
580+52	C	5/8	3/8	1/2
580+81	Ex.	1/2	1-3/16	7/8
581+02.0	Bridge Begin			
582+67.0	Bridge End			
582+89.7	Ex.	7/8	1/2	1"
583+18.7	C	1"	3/4	1-1/8
583+42.4	C	1/2	1/2	5/8
583+72.5	C	9/16	1/2	1/2
584+00.7	Ex.	5/8	3/16	3/16
584+30.7	C	5/8	1/2	7/16
584+61.3	C	1/2	1/2	9/16
584+91.3	C	1/2	1/2	9/16

Sta.	Type	Lt.	C.L.	Rt.
585+21.3	Ex.	3/4	5/16	1/2
585+51.3	C	3/4	1/2	9/16
585+81.0	Const. Jt.			
586+11.3	C	5/16	1/2	5/8
586+40.7	Ex.	1/2	15/16	1"
586+61.0	Bridge Begin			
588+26.0	Bridge End			
588+47.4	Ex.	9/16	1-3/16	3/8
588+76	C	5/16	7/16	3/8
589+08.5	C	1/2	7/16	1/2
589+41	C	7/16	1/2	1/2
589+71	C	1/2	5/16	1/2
590+01	Ex.	1/2	1/2	1/2
590+31	C	7/16	5/16	3/8
590+61	C	9/16	3/8	7/16
590+91	C	7/16	3/8	1/2
591+21	Ex.	1/2	1/2	7/16
591+51	C	3/4	13/16	5/8
591+81	C	3/4	1/2	1/2
592+11	C	9/16	9/16	3/4
592+41	Ex.	3/4	1/2	1/2
592+71	C	5/8	5/8	5/8
593+01	C	1/2	3/8	7/8
593+31	C	5/8	1/2	5/8
593+61	Ex.	1/2	1/2	1/2
593+91	C	3/4	3/4	3/4
594+21	C	3/4	9/16	9/16
594+50.8	C	3/16	1/4	3/8
594+79.8	Ex.	1-1/2	1-1/2	1-3/4

Sta.	Type	Lt.	C.L.	Rt.
595+01.0	Bridge Begin			
596+66.0	Bridge End			
596+87.4	Ex.	15/16	1-3/4	5/8
597+16	C	9/16	1/2	1/2
597+40	C	5/8	3/8	1/2
597+65	Ex.	9/16	5/16	1/2
597+95	C	3/4	5/8	1/2
598+25	C	5/8	1/2	5/8
598+55	Ex.	3/4	7/16	9/16
598+85	C	5/8	1/2	9/16
599+15	C	3/4	5/16	5/8
599+45	C	9/16	1/2	3/8
599+75	Ex.	3/4	7/16	1/2
600+05	C	1/2	3/8	7/16
600+35	C	9/16	3/8	9/16
600+68	C	5/16	3/8	5/8
600+95	Ex.	1-1/2	1-1/2	1"
601+14.5	Bridge Begin Skew			
602+99.5	Bridge End Skew			
603+20.2	Ex.	1/2	1-11/16	1"
603+49	C	5/8	9/16	3/8
603+78.7	C	1/2	1/4	11/16
604+07.3	C	3/4	1/2	1/2
604+36	Ex.	7/16	5/16	1/2
604+65.0	C	9/16	3/8	5/8
604+73.0	Const. Jt.			
604+93.7	C	1/2	7/16	9/16
605+22.3	C	5/8	3/8	7/16
605+51	Ex.	1/4	1/8	1/4

Sta.	Type	Lt.	C.L.	Rt.
605+80	C	1/4	1/4	1/2
606+08.7	C	3/8	9/16	7/16
606+37.5	C	5/8	11/16	9/16
606+66	Ex.	5/16	1/8	1/2
606+95	C	3/8	1/2	1/2
607+23.6	C	1/2	1/2	1/2
607+52.4	C	11/16	5/8	3/4
607+81.0	Ex.	4/16	3/16	3/8
608+10.0	C	3/4	11/16	3/4
608+38.6	C	11/16	13/16	5/8
608+66.2	C	7/8	1"	3/4
608+96	Ex.	1/2	7/8	3/8
609+16.6	Bridge Begin			
610+82.0	Bridge End			
611+02.6	Ex.	11/16	1-1/16	1"
611+32.2	C	9/16	1/2	5/8
611+57.1	C	3/4	1/4	1/2
611+84.4	C	3/8	7/16	7/16
612+10	Ex.	5/16	1/4	7/16
612+37.5	C	3/4	1/2	5/8
612+65	C	1/2	9/16	11/16
612+90	C	9/16	5/16	11/16
613+20	Ex.	7/16	3/8	3/8
613+50	C	5/8	3/8	3/4
613+80	C	3/16	1/2	5/8
614+10	C	5/8	7/16	7/8
614+40	Ex.	9/16	7/16	1/2
614+70	C	9/16	1/2	11/16
615+00	C	3/4	9/16	11/16

Sta.	Type	Lt.	C.L.	Rt.
615+30	C	5/8	11/16	11/16
615+60	Ex.	9/16	3/8	3/8
615+90	C	1/2	1/2	9/16
616+20	C	11/16	1/2	5/8
616+50	C	3/8	9/16	3/4
616+80	Ex.	1/2	7/16	9/16
617+10	C	11/16	1/2	7/8
617+40	C	5/8	1/2	1/2
617+70	C	1/2	9/16	5/8
618+00	Ex.	3/8	5/16	1/2
618+30	C	5/8	1/2	11/16
618+60	C	1/2	9/16	1/2
618+90	C	9/16	3/8	3/8
619+20	Ex.	1/2	3/8	7/16
619+50	C	3/8	9/16	9/16
619+80	C	1/2	9/16	11/16
620+10.0	Const. Jt.			
620+40	Ex.	3/8	7/16	1/2
620+70	C	1/2	1/2	1/2
621+00	C	1/2	3/8	9/16
621+30	C	5/16	1/4	5/8
621+60	Ex.	5/16	3/8	5/8
621+90	C	5/8	3/8	9/16
622+20	C	3/4	11/16	5/8
622+50	C	5/8	1/4	9/16
622+80	Ex.	5/16	5/16	7/16
623+10	C	1/2	3/8	9/16
623+40	C	9/16	1/2	5/8
623+70	C	3/4	1/2	11/16

Sta.	Type	Lt.	C.L.	Rt.
624+00	Ex.	7/16	3/16	9/16
624+30	C	1/2	3/8	9/16
624+60	C	1/2	1/2	5/8
624+90	C	1/2	7/16	1/2
625+20	Ex.	7/16	1/4	7/16
625+50	C	5/8	1/2	5/8
625+80	C	1/2	3/8	3/4
626+10	C	1/2	3/8	9/16
626+40	Ex.	1/2	1/2	11/16
626+70	C	1/2	7/16	5/8
627+00	C	5/8	5/8	9/16
627+30	C	5/8	5/16	9/16
627+60	Ex.	9/16	1/2	1/2
627+90	C	7/8	5/8	5/8
628+20	C	3/4	1/2	3/4
628+50	C	1/2	5/16	9/16
628+80	Ex.	1/2	1/2	3/4
629+10	C	11/16	5/8	3/4
629+29.6	Const. Jt.			
629+40	C	7/16	1/2	1/2
629+70	C	9/16	3/4	9/16
630+00	Ex.	5/16	13/16	1/2
630+20	C	3/4	13/16	11/16
630+40	C	13/16	13/16	11/16
630+60	C	11/16	11/16	7/8
630+80	C	5/8	9/16	9/16
631+00	C	5/8	1/2	5/8
631+20	C	5/8	5/8	3/4
631+40	C	13/16	9/16	3/4
631+60	C	15/16	3/4	3/4
631+80	C	1/2	7/8	13/16
632+00	C	11/16	13/16	13/16
632+20	C	5/8	3/4	3/4
632+40	C	5/8	5/8	11/16
632+60	C	3/4	5/8	5/8
632+80	Ex.	9/16	1/2	5/8
633+00	C	13/16	3/4	7/8
633+20	C	7/8	1-1/16	15/16
633+40	C	11/16	1"	15/16
633+60	C	9/16	7/8	3/4
633+80	C	9/16	3/4	13/16
634+00	C	3/4	3/4	15/16
634+20	C	15/16	11/16	13/16
634+40	C	9/16	11/16	7/8
634+60	C	11/16	15/16	3/4
634+80	C	5/8	11/16	5/8
635+00	C	3/4	3/4	13/16
635+20	C	1"	13/16	7/16
635+40	C	9/16	5/8	11/16
635+60	C	1/2	1/2	9/16
635+80	C	7/16	1/4	11/16
636+00	C	11/16	13/16	9/16
636+20	C	1/2	5/8	1/2
636+40	C	11/16	13/16	1/2
636+60	C	11/16	5/8	9/16
636+80	C	11/16	3/4	5/8
637+00	C	11/16	9/16	9/16
637+20	C	11/16	9/16	11/16
637+40	C	9/16	13/16	5/8

Sta.	Type	Lt.	C.L.	Rt.
637+60	C	1/2	1/2	5/8
637+80	C	9/16	3/4	11/16
638+00	C	7/16	9/16	9/16
638+20	C	9/16	11/16	11/16
638+40	C	3/4	7/8	1/2
638+60	C	3/4	3/4	1/2
638+80	C	1/2	11/16	3/4
639+00	C	7/16	5/8	11/16
639+20	C	5/8	9/16	11/16
639+40	C	13/16	5/8	3/4
639+60	C	13/16	3/4	3/4
639+80	C	5/8	7/8	9/16
640+00	C	5/8	5/8	13/16
640+20	C	13/16	15/16	1"
640+40	C	7/8	11/16	10/16
640+60	C	13/16	7/8	7/8
640+80	Ex.	7/16	11/16	13/16
640+99.7	Const. Jt.			
641+20	C	11/16	5/8	3/4
641+40	C	3/4	11/16	15/16
641+60	C	3/4	9/16	3/4
641+80	C	13/16	13/16	1-1/16
642+00	C	3/4	15/16	13/16
642+20	C	1/2	3/8	9/16
642+40	C	11/16	15/16	7/8
642+60	C	1"	7/8	1"
642+80	C	3/4	5/8	11/16
643+00	C	5/8	9/16	1/2
643+20	C	5/8	13/16	11/16
643+40	C	9/16	3/4	3/4
643+60	C	7/8	13/16	15/16
643+80	C	9/16	1/2	3/4
644+00	C	1/2	13/16	9/16
644+20	C	3/4	5/8	13/16
644+40	C	11/16	1"	11/16
644+60	C	1/2	3/4	3/4
644+80	C	11/16	9/16	9/16
645+00	C	5/16	1/2	5/8
645+20	C	7/16	3/4	5/8
645+40	C	1/2	3/4	9/16
645+60	C	11/16	1/2	3/4
645+80	C	5/8	13/16	3/4
646+00	C	7/16	7/16	5/8
646+20	C	11/16	13/16	13/16
646+40	C	11/16	7/8	1"
646+60	C	3/4	1"	15/16
646+80	C	3/4	15/16	15/16
647+00	C	7/8	15/16	15/16
647+20	C	5/8	7/8	7/8
647+40	C	1/2	7/8	7/8
647+60	C	3/8	1/2	1/2
647+80	C	1/2	9/16	5/8
648+00	C	5/8	13/16	11/16
648+20	C	11/16	5/8	5/8
648+40	C	5/8	9/16	7/8
648+60	C	11/16	9/16	9/16
648+80	Ex.	1/4	5/16	1/2
649+00	C	11/16	9/16	9/16

Sta.	Type	Lt.	C.L.	Rt.
649+20	C	5/8	13/16	3/4
649+40	C	11/16	11/16	9/16
649+60	C	3/8	9/16	3/4
649+80	C	9/16	3/4	5/8
650+00	C	5/8	5/8	3/4
650+20	C	5/8	13/16	5/8
650+40	C	5/8	11/16	5/8
650+60	C	1/2	9/16	11/16
650+80	C	9/16	5/8	9/16
651+00	C	1/2	5/8	5/8
651+20	C	9/16	5/8	1/2
651+40	C	11/16	10/16	9/16
651+60	C	7/16	9/16	3/4
651+80	C	5/8	9/16	3/4
652+00	C	7/16	9/16	11/16
652+20	C	9/16	11/16	11/16
652+40	C	11/16	11/16	1/2
652+60	C	9/16	5/8	9/16
652+80	C	7/16	1/2	7/16
653+00	C	3/8	7/16	9/16
653+20	C	9/16	7/16	1/2
653+40	C	1/2	9/16	1/2
653+60	C	9/16	9/16	11/16
653+80	C	1/2	5/8	5/8
654+00.0 Const. Jt.				
654+20	C	7/16	9/16	9/16
654+40	C	9/16	5/8	11/16
654+60	C	1/2	13/16	3/4
654+80	C	11/16	13/16	7/8

Sta.	Type	Lt.	C.L.	Rt.
655+00	C	5/8	7/8	7/8
655+20	C	1/2	5/8	3/4
655+40	C	5/8	9/16	11/16
655+60	C	9/16	13/16	7/8
655+80	C	3/4	7/8	7/8
656+00	C	1/2	3/4	3/4
656+20	C	11/16	5/8	7/8
656+40	C	11/16	3/4	3/4
656+60	C	3/4	1/2	3/4
656+80	Ex.	7/16	7/16	3/4
657+00	C	5/8	3/4	11/16
657+20	C	11/16	9/16	1"
657+40	C	3/4	3/4	7/8
657+60	C	3/4	11/16	13/16
657+80	C	1/2	7/8	3/4
658+00	C	1/2	11/16	7/8
658+20	C	1/2	3/4	5/8
658+40	C	5/8	1"	1"
658+60	C	1/2	9/16	3/4
658+80	C	1/2	5/8	13/16
659+00	C	5/8	3/4	3/4
659+20	C	3/4	5/8	5/8
659+40	C	11/16	13/16	5/8
659+60	C	1/2	7/8	13/16
659+80	C	9/16	3/4	3/4
660+00	C	7/16	11/16	13/16
660+20	C	5/8	5/8	7/8
660+40	C	7/8	7/8	1/2
660+60	C	1/2	5/8	5/8

Sta.	Type	Lt.	C.L.	Rt.
660+80	Ex.	7/16	7/16	7/16
661+00	C	7/16	3/4	7/8
661+20	C	9/16	1/2	11/16
661+40	C	5/8	1/2	9/16
661+60	C	1/2	9/16	1/2
661+80	C	7/16	5/8	9/16
662+00	C	7/16	9/16	7/16
662+20	C	7/16	9/16	5/8
662+40	C	5/8	5/8	11/16
662+60	C	5/8	11/16	7/16
662+80	C	3/4	5/8	5/8
663+00	C	5/8	5/8	3/4
663+20	C	1/2	7/16	11/16
663+40	C	1/2	7/16	9/16
663+60	C	7/16	7/16	5/8
663+80	C	9/16	5/8	9/16
664+00	C	1/2	9/16	7/16
664+20	C	5/8	9/16	7/16
664+40	C	1/2	1/2	1/2
664+60	C	11/16	5/8	11/16
664+80	Ex.	7/16	5/16	5/16
665+00	C	5/8	1/2	7/16
665+20	C	1/2	7/16	5/8
665+40	C	7/16	7/16	9/16
665+60	C	9/16	7/16	5/8
665+80	C	5/8	5/8	7/16
666+00	C	5/8	11/16	1/2
666+20	C	1/2	1/2	11/16
666+40	C	9/16	3/4	3/8
666+60	C	3/4	5/8	3/4
666+80	C	1/2	9/16	3/4
667+00	C	3/8	1/8	9/16
667+19.6	Const. Jt.			
667+40	C	3/4	3/4	5/8
667+60	C	3/8	1/2	11/16
667+80	C	11/16	11/16	9/16
668+00	C	3/4	3/4	3/4
668+20	C	9/16	1/2	3/4
668+40	C	3/4	3/4	3/4
668+60	C	5/8	9/16	7/8
668+80	Ex.	1/4	7/16	9/16
669+00	C	5/8	11/16	15/16
669+20	C	13/16	1/2	15/16
669+40	C	1/2	3/4	3/4
669+60	C	1/2	1/4	3/4
669+80	C	5/8	5/8	1/2
670+00	C	3/4	3/4	3/4
670+20	C	3/4	5/8	5/8
670+40	C	1/2	9/16	7/8
670+60	C	5/8	9/16	3/4
670+80	C	11/16	3/4	11/16
671+00	C	11/16	3/4	7/8
671+20	C	1/2	1/2	3/4
671+40	C	5/8	3/8	5/8
671+60	C	3/4	3/4	1/2
671+80	C	3/4	3/4	5/8
672+00	C	11/16	5/16	3/4
672+20	C	9/16	1/4	1/2

Sta.	Type	Lt.	C.L.	Rt.
672+40	C	7/16	3/8	7/16
672+60	C	7/16	5/16	5/8
672+80	Ex.	1/8	1/4	3/8
673+00	C	5/8	9/16	5/8
673+20	C	11/16	5/8	3/4
673+40	C	1/2	3/4	5/8
673+60	C	5/8	3/8	1/2
673+80	C	9/16	1/2	3/8
674+00	C	7/16	1/2	5/16
674+20	C	1/4	3/8	3/8
674+40	C	5/8	1/2	1/2
674+60	C	9/16	11/16	1/2
674+80	C	1/2	5/16	5/8
675+00	C	1/4	3/8	3/4
675+20	C	3/16	1/2	1/2
675+40	C	9/16	1/2	1/2
675+60	C	11/16	11/16	1/2
675+80	C	7/16	3/8	1/2
676+00	C	11/16	3/8	3/8
676+20	C	9/16	3/8	1/2
676+39.6 Const. Jt.				
676+60	C	3/4	3/4	3/4
676+80	Ex.	1/4	0	1/4
677+00	C	1/2	1/2	1/2
677+20	C	5/8	5/8	3/8
677+40	C	11/16	1/4	3/8
677+60	C	9/16	5/16	1/2
677+80	C	1/2	1/4	1/2
678+00	C	1/2	3/4	5/8

Sta.	Type	Lt.	C.L.	Rt.
678+20	C	3/8	1/2	1/2
678+40	C	1/2	1/2	1/2
678+60	C	5/8	1/2	5/8
678+80	C	11/16	1/2	5/8
679+00	C	3/4	5/8	5/8
679+20	C	9/16	3/8	5/8
679+40	C	9/16	1/2	9/16
679+60	C	11/16	5/8	5/8
679+80	C	3/4	1/2	1/2
680+00	C	1/2	1/4	3/8
680+20	C	11/16	5/8	3/4
680+40	C	5/8	1/2	5/8
680+60	C	9/16	1/2	5/8
680+80	Ex.	3/4	1/2	9/16
681+00.6 Const. Jt.				
681+20	C	3/4	9/16	7/8
681+40	C	3/4	3/4	5/8
681+60	C	5/8	1/2	5/8
681+80	Ex.	3/8	1/2	3/8
682+00	C	1/2	9/16	5/8
682+20	C	1/2	9/16	5/8
682+40	C	3/4	7/8	3/4
682+60	C	9/16	3/4	11/16
682+80	C	3/4	9/16	3/4
683+00	Ex.	1/4	3/4	3/8
683+20	C	11/16	9/16	3/4
683+40	C	9/16	9/16	3/4
683+60	C	3/4	13/16	5/8
683+80	C	3/4	3/4	3/4

Sta.	Type	Lt.	C.L.	Rt.
684+00	C	15/16	1"	1"
684+20	Ex.	1/4	1/2	1/2
684+40	C	3/4	7/16	1"
684+60	C	9/16	3/4	3/4
684+80	C	7/16	5/8	3/4
685+00	C	3/4	5/8	3/4
685+20	C	9/16	3/4	3/4
685+40	C	9/16	3/8	3/4
685+60	C	7/8	1/2	3/4
685+80	Ex.	1/4	1/2	11/16
686+00	C	7/8	5/8	1"
686+20	C	3/4	11/16	3/4
686+40	C	5/8	5/8	3/4
686+60	Ex.	7/16	9/16	3/8
686+80	C	5/8	3/8	1"
687+00	C	5/8	1/2	3/4
687+20	C	3/4	3/4	1"
687+40	C	1"	11/16	11/16
687+60	C	3/4	1/2	3/4
687+80	Ex.	7/16	11/16	1/2
688+00	C	3/4	3/8	11/16
688+20	C	9/16	1/2	11/16
688+40	C	9/16	1/2	5/8
688+60	C	1/2	1/2	1/2
688+80	C	3/4	3/8	11/16
689+00	Ex.	7/16	3/4	1/2
689+20	C	3/4	7/16	5/8
689+40	C	3/4	5/8	5/8
689+60	C	9/16	11/16	7/8
689+80	C	3/4	11/16	3/4
690+00	C	1/2	3/4	3/4
690+20	Ex.	7/16	1/2	1/2
690+40	C	3/4	5/8	7/16
690+60	C	5/8	9/16	9/16
690+80	C	7/16	9/16	7/16
691+00	C	7/16	1/2	5/8
691+20	C	7/8	15/16	1"
691+40	Ex.	9/16	7/8	1/2
691+60	C	7/8	3/4	1/2
691+80	C	7/8	5/8	3/4
692+00	C	3/4	1/2	3/4
692+20	C	3/4	1/2	13/16
692+40	C	7/8	3/4	3/4
692+60	Ex.	5/8	3/4	1/2
692+80	C	7/8	9/16	3/4
693+00	C	7/8	1/4	3/4
693+29.5	Const. Jt.			
693+40	C	5/8	5/8	3/4
693+60	C	3/4	3/4	13/16
693+80	Ex.	9/16	3/4	1/2
694+00	C	9/16	1/2	11/16
694+20	C	1/2	1/2	3/4
694+40	C	9/16	5/8	7/16
694+60	C	7/16	9/16	5/8
694+80	C	7/16	9/16	7/16
695+00	Ex.	7/16	15/16	3/4
695+20	C	7/16	3/8	1/2
695+40	C	7/16	3/8	3/8

Sta.	Type	Lt.	C.L.	Rt.
695+60	C	9/16	1/2	5/8
695+80	C	5/8	1/2	3/4
696+00	C	1/2	3/8	1/2
696+20	Ex.	9/16	9/16	9/16
696+40	C	9/16	3/8	5/8
696+60	C	7/16	9/16	5/8
696+80	C	3/4	1/2	11/16
697+00	C	5/8	1/2	1/2
697+20	C	3/4	1/2	5/8
697+40	Ex.	3/4	3/8	5/8
697+60	C	5/8	1/2	3/4
697+80	C	5/8	5/8	5/8
698+00	C	5/8	1/2	5/8
698+20	C	15/16	1/2	5/8
698+40	C	7/8	9/16	13/16
698+60	Ex.	1/8	1/8	7/16
698+80	C	9/16	9/16	1/2
699+00	C	1/2	7/16	9/16
699+20	C	3/4	7/16	7/16
699+40	C	7/16	1/2	7/16
699+60	C	3/4	3/8	3/8
699+80	Ex.	3/8	7/16	5/8
700+00	C	3/4	3/8	3/8
700+20	C	7/8	1/4	1/2
700+40	C	5/8	5/16	7/16
700+60	C	7/16	1/4	3/8
700+80	C	5/8	1/4	1/2
701+00	Ex.	1/8	5/16	3/8
701+20	C	9/16	3/8	3/8
701+40	C	9/16	1/4	9/16

Sta.	Type	Lt.	C.L.	Rt.
701+60	C	7/16	5/16	1/2
701+80	C	1/4	1/2	9/16
702+00	C	7/16	1/2	1/2
702+20	Ex.	1/4	1/4	1/2
702+40	C	5/8	7/16	3/8
702+60	C	5/8	5/8	5/8
702+80	C	9/16	1/2	9/16
703+00	C	9/16	5/8	1/2
703+20	C	5/8	1/2	1/2
703+40.0 Const. Jt.	Ex.	1-1/16	5/8	3/4
703+60	C	1"	5/8	15/16
703+80	C	7/8	1/2	3/4
704+00	C	1/2	1/4	3/8
704+20	C	3/4	3/8	1/2
704+40	C	5/8	1/2	5/8
704+60	Ex.	9/16	5/8	1/2
704+80	C	5/8	9/16	3/4
705+00	C	15/16	3/8	5/8
705+20	C	1-1/8	1/2	1/2
705+40.0 Const. Jt.				
705+60	C	3/4	1/2	7/16
705+80	Ex.	7/16	1/2	9/16
706+00	C	7/16	1/2	9/16
706+20	C	1/4	3/4	3/4
706+40	C	9/16	5/8	5/8
706+60	C	3/4	1/2	3/4
706+80	C	7/8	1/4	7/8
707+00	Ex.	1/2	1/2	7/8
707+20	C	7/16	1/4	3/4

Sta.	Type	Lt.	C.L.	Rt.
707+40	C	7/8	9/16	7/8
707+60	C	5/8	3/8	3/16
707+80	C	9/16	1/2	5/8
708+00	C	1-1/8	1/2	1-3/8
708+20	C	3/4	9/16	5/8
708+40	Ex.	1/2	1/4	15/16
708+60	C	3/4	5/8	13/16
708+80	C	3/4	1/2	1/2
709+00	C	5/8	3/8	5/8
709+20	C	3/4	1/2	3/4
709+40	Ex.	1/8	5/16	1/2
709+60	C	3/4	7/16	3/4
709+80	C	3/4	1/4	7/16
710+00	C	5/8	1/8	1/2
710+60	Ex.	9/16	1/2	1/2
711+20	C	3/4	1/8	3/4
711+80	Ex.	3/4	9/16	3/8
712+40	C	9/16	9/16	1/4
713+00	Ex.	1/2	9/16	1-3/16
713+60	C	7/16	7/16	9/16
714+20	Ex.	3/4	11/16	9/16
714+80	C	9/16	3/4	3/4
715+40	Ex.	5/8	9/16	7/8
716+00.0 Const. Jt.				
716+60	Ex.	1/2	9/16	1-1/8
717+20	C	9/16	1/2	3/4
717+80	Ex.	3/4	1-3/8	1-1/8
718+40	C	1/2	5/16	1/2
719+00	Ex.	1/8	1/8	1/4
719+60	C	3/4	1/2	15/16
720+20	Ex.	1/8	3/16	1/8
720+80	C	3/8	1/8	1/2
721+40	Ex.	1/16	1/16	1/8
722+00	C	9/16	1/2	3/8
722+60	Ex.	3/16	1/8	1/8
723+20	C	3/4	9/16	1/2
723+80	Ex.	3/8	3/8	1/4
724+40	C	9/16	3/8	1/2
725+00	Ex.	3/8	1/4	1/2
725+20	C	1/2	9/16	1/4
725+40.0 Const. Jt.				
725+60	C	5/16	7/16	3/8
725+80	C	5/8	7/16	9/16
726+00	C	9/16	9/16	5/8
726+20	Ex.	1/2	7/16	7/16
726+40	C	9/16	9/16	5/8
726+60	C	9/16	3/4	3/4
726+80	C	9/16	3/4	11/16
727+00	C	7/16	1/4	9/16
727+20	C	1/2	9/16	5/16
727+40	Ex.	1/2	7/16	7/16
727+60	C	1/2	7/16	1/2
727+80	C	1/2	9/16	7/16
728+00	C	1/2	7/16	7/16
728+20	C	9/16	9/16	7/16
728+40	C	3/8	5/8	13/16
728+60	Ex.	1/2	11/16	7/16
728+80	C	3/4	13/16	1/2

Sta.	Type	Lt.	C.L.	Rt.
729+00	C	3/8	1/2	11/16
729+20	C	1/2	3/4	5/8
729+40	C	3/4	11/16	3/4
729+60	C	5/8	1/2	5/8
729+80	Ex.	1/4	1/4	3/8
730+00	C	3/4	1/2	5/8
730+20	C	1/2	1/4	1/2
730+40	C	5/8	1/4	1/2
730+60	C	11/16	1/2	7/16
730+80	C	9/16	1/2	9/16
731+00	Ex.	3/16	1/2	7/16
731+09.5	Const. Jt.			
731+20	C	3/8	5/16	7/16
731+40	C	5/16	3/8	11/16
731+60	C	9/16	9/16	3/8
731+80	C	5/8	1/2	1-1/8
732+00	C	3/4	7/16	1/2
732+20	Ex.	3/16	7/16	5/8
732+40	C	11/16	1/2	7/16
732+60	C	9/16	3/8	1/2
732+80	C	3/4	3/4	13/16
733+00	C	9/16	3/8	15/16
733+20	C	9/16	5/16	9/16
733+40	Ex.	5/16	3/8	1/2
733+60	C	9/16	1/4	15/16
733+80	C	5/8	1/4	3/4
734+00	C	7/16	7/16	3/4
734+20	C	3/4	13/16	3/4
734+40	C	3/4	9/16	1/4
734+60	Ex.	3/4	1/2	3/16
734+80	C	1/4	3/8	1/2
735+00	C	11/16	3/4	1/2
735+20	C	3/4	1/2	7/16
735+40	C	5/8	5/16	5/16
735+60	C	9/16	3/8	5/16
735+80	Ex.	1/4	5/16	3/16
736+00	C	11/16	5/8	5/8
736+20	C	9/16	3/8	7/16
736+40	C	1/2	7/8	1/2
736+60	C	3/4	5/8	5/8
736+80	C	1/4	3/4	5/8

XIII. SECTION LEVEL MEASUREMENTS

Section No. 1 Sept. 11, 1940

Standard B.M. No. 1 - Elevation 398.840 - 38 ft. left of sta. 517+50

(18A Sta. 514+45)	402.625	28A	402.635	38A	402.645
18B	402.625	28B	402.630	38B	402.640
18C	402.630	29A	402.630	39A	402.630
19A	402.620	29B	402.625	39B	402.635
19B	402.620	30A	402.650	40A	402.630
20A	402.630	30B	402.650	40B	402.625
20B	402.635	30C	402.655	41A	402.625
21A	402.635	31A	402.660	41B	402.625
21B	402.635	31B	402.660	41C	402.610
22A	402.620	32A	402.635	42A	402.610
22B	402.620	32B	402.640	42B	402.610
23A	402.630	33A	402.645	43A	402.615
23B	402.630	33B	402.650	43B	402.620
24A	402.630	34A	402.640	44A	402.610
24B	402.630	34B	402.640	44B	402.600
24C	402.630	35A	402.640	45A	402.610
25A	402.630	35B	402.640	45B	402.610
25B	402.625	35C	402.650	46A	402.640
26A	402.650	36A	402.650	46B	402.640
26B	402.650	36B	402.650	47A	402.660
27A	402.630	37A	402.640	47B	402.660
27B	402.630	37B	402.640	47C	402.680
				48A	402.710
				(48B Sta. 520+44)	402.710

Section No. 2

Sept. 11, 1940

Standard B.M. No. 2 - Elevation 407.470 - 38 ft. right of sta. 506+40

(1A Sta. 502+00)	414.270	13A	410.565	25A	407.020	37B	403.600
1B	414.260	13B	410.555	25B	407.015	38A	403.380
1C	414.110	14A	410.265	26A	406.720	38B	403.380
2A	413.960	14B	410.255	26B	406.715	39A	403.230
2B	413.950	15A	409.970	27A	406.420	39B	403.230
3A	413.625	15B	409.965	27B	406.415	40A	403.080
3B	413.620	16A	409.685	28A	406.125	40B	403.075
4A	413.300	16B	409.680	28B	406.120	40C	403.010
4B	413.295	17A	409.380	29A	405.815	41A	402.960
5A	413.000	17B	409.375	29B	405.810	(41B Sta. 510+00)	402.960
5B	412.990	17C	409.240	30A	405.530		
6A	412.690	18A	409.080	30B	405.520		
6B	412.680	18B	409.080	31A	405.215		
7A	412.365	19A	408.800	31B	405.210		
7B	412.360	19B	408.795	32A	404.900		
8A	412.050	20A	408.500	32B	404.895		
8B	412.050	20B	408.495	32C	404.750		
9A	411.745	21A	408.200	33A	404.620		
9B	411.740	21B	408.190	33B	404.620		
9C	411.585	22A	407.900	34A	404.330		
10A	411.445	22B	407.900	34B	404.330		
10B	411.440	23A	407.605	35A	404.070		
11A	411.145	23B	407.600	35B	404.070		
11B	411.135	24A	407.320	36A	403.820		
12A	410.840	24B	407.325	36B	403.820		
12B	410.835	24C	407.165	37A	403.600		

Section No. 3 Sept. 11, 1940

Standard B.M. No. 3 - Elevation 423.615 - 38 ft. left of sta. 466+40

(1A Sta. 462+00)	423.315	14A	423.835	26B	424.335	39B	424.865
1B	423.320	14B	423.835	27A	424.365	40A	424.895
1C	423.335	15A	423.885	27B	424.365	40B	424.900
2A	423.365	15B	423.885	28A	424.405	40C	424.925
2B	423.365	16A	423.935	28B	424.405	41A	424.945
3A	423.415	16B	423.935	29A	424.450	(41B Sta. 470+00)	424.950
3B	423.415	17A	423.985	29B	424.445		
4A	423.450	17B	423.985	30A	424.495		
4B	423.455	17C	424.010	30B	424.500		
5A	423.500	18A	424.025	31A	424.525		
5B	423.505	18B	424.025	31B	424.535		
6A	423.520	19A	424.055	32A	424.570		
6B	423.525	19B	424.065	32B	424.575		
7A	423.560	20A	424.105	32C	424.595		
7B	423.565	20B	424.105	33A	424.615		
8A	423.590	21A	424.145	33B	424.615		
8B	423.595	21B	424.155	34A	424.655		
9A	423.630	22A	424.190	34B	424.660		
9B	423.625	22B	424.195	35A	424.715		
9C	423.645						
10A	423.665	23A	424.225	35B	424.710		
10B	423.670	23B	424.230	36A	424.740		
11A	423.705	24A	424.260	36B	424.740		
11B	423.715	24B	424.265	37A	424.785		
12A	423.755	24C	424.285	37B	424.790		
12B	423.755	25A	424.295	38A	424.830		
13A	423.795	25B	424.295	38B	424.835		
13B	423.800	26A	424.340	39A	424.865		

Section No. 4 Sept. 10, 1940

Standard B.M. No. 4 - Elevation 417.900 - 38 ft. right of sta. 452+25.

(1A Sta. 448+02)	420.410	13A	420.890	22B	421.280
1B	420.415	13B	420.890	23A	421.310
		13C	420.925		
2A	420.445	14A	420.940	23B	421.310
2B	420.450	14B	420.940	24A	421.360
				24B	421.365
3A	420.490	14C	420.965	25A	421.400
3B	420.490	15A	420.980	25B	421.400
4A	420.540	15B	420.980	26A	421.440
4B	420.540	15C	421.000	26B	421.445
5A	420.570	16A	421.040	27A	421.470
5B	420.570	16B	421.045	27B	421.475
6A	420.610	16C	421.065	28A	421.530
6B	420.615	17A	421.095	28B	421.530
7A	420.640	17B	421.100	29A	421.580
7B	420.630	17C	421.120	29B	421.580
8A	420.675	18A	421.120	30A	421.620
8B	420.680	18B	421.120	30B	421.620
9A	420.720	18C	421.140	31A	421.670
9B	420.725	19A	421.160	(31B Sta. 454+02)	421.665
10A	420.770	19B	421.160		
10B	420.770	20A	421.195		
11A	420.810	20B	421.195		
11B	420.800	21A	421.225		
12A	420.840	21B	421.240		
12B	420.845	22A	421.280		

Section No. 5 Sept. 10, 1940

Standard B.M. No. 5 - Elevation 424.540 - 38 ft. right of sta. 436+40

(1A Sta. 433+61)	426.370	13A	426.125	22A	424.015
1B	426.375	13B	426.120	22B	424.010
2A	426.470	13C	426.070	23A	423.705
2B	426.475	14A	425.980	23B	423.685
3A	426.540	14B	425.975	24A	423.395
3B	426.545	14C	425.880	24B	423.390
4A	426.570	15A	425.790	25A	423.100
4B	426.575	15B	425.795	25B	423.095
5A	426.590	15C	425.695	26A	422.775
5B	426.595	16A	425.575	26B	422.775
6A	426.600	16B	425.565	27A	422.515
6B	426.605	16C	425.475	27B	422.510
7A	426.600	17A	425.370	28A	422.220
7B	426.600	17B	425.360	28B	422.215
8A	426.575	17C	425.275	29A	421.925
8B	426.570	18A	425.145	29B	421.915
9A	426.500	18B	425.145	30A	421.635
9B	426.500	18C	425.020	30B	421.625
10A	426.440	19A	424.880	31A	421.335
10B	426.440	19B	424.875	(31B Sta. 439+61)	421.320
11A	426.350	20A	424.605		
11B	426.350	20B	424.595		
12A	426.250	21A	424.315		
12B	426.250	21B	424.305		

Section No. 6 Sept. 10, 1940

Standard B.M. No. 6 - Elevation 444.330 - 38 ft. left of sta. 413+00.

(1A Sta. 410+81)	439.350	9C	441.225
1B	439.350	10A	441.010
1C	439.500	10B	441.010
2A	439.650	10C	440.740
2B	439.655	11A	440.400
2C	439.810	(11B Sta. 416+81)	440.390
3A	439.970		
3B	439.970		
3C	440.130		
4A	440.300		
4B	440.300		
4C	440.460		
5A	440.600		
5B	440.605		
5C	440.770		
6A	440.890		
6B	440.890		
6C	441.050		
7A	441.195		
7B	441.200		
7C	441.320		
8A	441.420		
8B	441.420		
8C	441.420		
9A	441.360		
9B	441.360		

Section No. 7 Sept. 10, 1940

Standard B.M. No. 7 - Elevation 435.290 - 38 ft. right of sta. 406+40

(1A Sta. 403+61)	439.545	12A	438.275	20A	438.010
1B	439.535	12B	438.270	20B	438.010
2A	439.375	13A	438.210	21A	438.020
2B	439.375	13B	438.205	21B	438.025
3A	439.215	13C	438.185	22A	438.040
3B	439.215	14A	438.145	22B	438.040
4A	439.065	14B	438.145	23A	438.080
4B	439.055	14C	438.135	23B	438.080
5A	438.925	15A	438.105	24A	438.120
5B	438.920	15B	438.105	24B	438.120
6A	438.805	15C	438.105	25A	438.160
6B	438.805	16A	438.050	25B	438.165
7A	438.695	16B	438.050	26A	438.230
7B	438.690	16C	438.010	26B	438.235
8A	438.610	17A	438.035	27A	438.310
8B	438.605	17B	438.030	27B	438.315
9A	438.515	17C	438.015	28A	438.415
9B	438.515	18A	438.015	28B	438.415
10A	438.415	18B	438.015	29A	438.505
10B	438.415	18C	438.015	29B	438.500
11A	438.315	19A	437.990	30A	438.615
11B	438.310	19B	437.990	30B	438.615
				31A	438.710
				(31B Sta. 409+61)	438.710

Section Standard

Sept. 11, 1940

Standard B.M. No. 8 - Elevation 405.000 - 38 ft. left of sta. 574+00.

(1A Sta. 567+61)	407.605	13A	405.445	25B	403.250	38A	400.870
1B	407.605	13B	405.445	26A	403.060	38B	400.865
1C	407.505	14A	405.265	26B	403.055	39A	400.700
2A	407.415	14B	405.260	27A	402.875	39B	400.700
2B	407.415	15A	405.080	27B	402.875	40A	400.540
3A	407.235	15B	405.075	28A	402.680	40B	400.540
3B	407.235	16A	404.875	28B	402.680	40C	400.485
4A	407.055	16B	404.875	29A	402.520	41A	400.430
4B	407.055	17A	404.705	29B	402.510	(41B Sta. 579+62)	400.430
5A	406.855	17B	404.700	30A	402.320		
		17C	404.615				
5B	406.850	18A	404.520	30B	402.320		
6A	406.680	18B	404.515	31A	402.145		
6B	406.675	19A	404.355	31B	402.145		
7A	406.500	19B	404.350	32A	401.960		
7B	406.495	20A	404.170	32B	401.955		
8A	406.330	20B	404.170	32C	401.860		
8B	406.335	21A	403.980	33A	401.775		
9A	406.150	21B	403.985	33B	401.770		
9B	406.155	22A	403.780	34A	401.595		
9C	406.055	22B	403.785	34B	401.590		
10A	405.975	23A	403.595	35A	401.400		
10B	405.975	23B	403.595	35B	401.395		
11A	405.820	24A	403.440	36A	401.230		
11B	405.820	24B	403.435	36B	401.230		
12A	405.625	24C	403.340	37A	401.080		
12B	405.625	25A	403.250	37B	401.070		

XIV. DAILY CHANGES IN JOINT WIDTH MEASUREMENTS NOV. 28, 1940

PRELIMINARY DATA

The changes in widths of the joints which were caused by the daily temperature cycle of November 28, 1940, are as follows:

Section No. 1

Time	7:50 a.m.	2:50 p.m.
T. Concrete F.	34	45
T. Air F.	30	40

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	C	5.072	5.048	-.024
5	C	5.044	5.025	-.019
10	C	5.028	5.012	-.016
29	C	4.964	4.948	-.016
33	C	5.000	4.983	-.017
56	C	4.910	4.896	-.014
61	C	5.132	5.118	-.014
65	C	5.107	5.091	-.016

Section No. 2

Time	7:40 a.m.	2:40 p.m.
T. Concrete F.	34	45
T. Air F.	30	40

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.084	5.066	-.018
2	C	5.104	5.089	-.015
6	C	5.154	5.143	-.011
11	C	5.074	5.058	-.016
20	C	5.048	5.035	-.013
22	C	5.129	5.110	-.019
31	C	5.100	5.086	-.014
36	C	5.153	5.130	-.023
40	C	5.147	5.125	-.022
41	Exp.	6.000	5.989	-.011

Section No. 3

Time	7:30 a.m.	2:30 p.m.
T. Concrete F.	34	45
T. Air F.	30	40

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	6.171	6.161	-.010
2	C	5.189	5.168	-.021
6	C	5.116	5.100	-.016
11	C	5.139	5.122	-.017
16	C	5.228	5.208	-.020
20	C	5.132	5.113	-.019
21	Exp.	5.016	5.004	-.012

Section No. 5

Time	7:20 a.m.	2:20 p.m.
T. Concrete F.	34	46
T. Air F.	30	42

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	6.184	6.157	-.027
8	C	5.113	5.098	-.015
9	C	5.044	5.026	-.018
10	C	5.091	5.070	-.021
11	C	5.064	5.050	-.014
12	C	5.045	5.032	-.013
13	Exp.	5.170	5.140	-.030

Note: Measurement of the daily change in widths of the joints in Section 4 is not scheduled.

Section No. 6

Time	7:10 a.m.	2:10 p.m.
T. Concrete F.	33	45
T. Air F.	29	41

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
3	Exp.	5.268	5.223	-.045
4	C	5.584	5.536	-.048
5	Exp.	5.475	5.430	-.045
6	C	5.195	5.151	-.044
7	Exp.	5.223	5.170	-.053

Section No. 7

Time	7:00 a.m.	2:00 p.m.
T. Concrete F.	33	45
T. Air F.	28	39

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	6.028	6.020	-.008
8	C	5.069	5.051	-.018
9	C	5.346	5.325	-.021
10	C	5.199	5.179	-.020
11	C	4.922	4.903	-.019
12	C	5.123	5.113	-.010
13	Exp.	5.942	5.927	-.015

Section Standard

Time	8:05 a.m.	3:10 p.m.
T. Concrete F.	37	46
T. Air F.	34	40

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
17	Exp.	5.545	5.525	-.020
18	C	5.196	5.177	-.019
19	C	5.119	5.102	-.017
20	C	5.217	5.196	-.021
21	Exp.	5.527	5.507	-.020
22	C	5.110	5.091	-.019
23	C	5.164	5.134	-.030
24	C	5.020	5.013	-.007
25	Exp.	5.169	5.139	-.030

SUMMARY OF THE DAILY CHANGES IN WIDTHS OF THE JOINTS NOV. 28, 1940.

Section No. 1. Design - contraction joints only, spaced 20 feet apart. For an increase in pavement temperature of 11 F., the average decrease in width of the joints was .017 inches.

Section No. 2. Design - expansion joints spaced 800 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 11 F., the average decrease in width of the expansion joints was .015 inches, and the average decrease in width of the contraction joints was .017 inches.

Section No. 3. Design - expansion joints spaced 400 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 11 F., the average decrease in width of the expansion joints was .011 inches, and the average decrease in width of the contraction joints was .019 inches.

Section No. 5. Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 12 F., the average decrease in width of the expansion joints was .029 inches, and the average decrease in width of the contraction joints was .016 inches.

Section No. 6. Design - alternate expansion and contraction joints spaced 60 feet apart. For an increase in pavement temperature of 12 F., the average decrease in width of the expansion joints was .048 inches, and the average decrease in width of the contraction joints was .046 inches.

Section No. 7. Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 12 F., the average decrease in width of the expansion joints was .012 inches, and the average decrease in width of the contraction joints was .018 inches.

Section Standard Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 30 feet apart. For an increase in pavement temperature of 9 F., the average decrease in width of the expansion joints was .023 inches, and the average decrease in width of the contraction joints was .019 inches.

XV. DAILY CHANGES IN JOINT WIDTH MEASUREMENTS FEB. 25, 1941

The changes in widths of the joints which were caused by the daily temperature cycle of February 25, 1941, are as follows:

Section No. 1

Time	7:55 a.m.	2:50 p.m.
T. Concrete F.	38	52
T. Air F.	37	47

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	C	5.060	5.035	-.025
5	C	5.029	5.008	-.021
10	C	5.009	4.987	-.022
29	C	4.957	4.940	-.017
33	C	4.988	4.967	-.021
56	C	4.899	4.884	-.015
61	C	5.117	5.098	-.019
65	C	5.087	5.068	-.019

Section No. 2

Time	7:40 a.m.	2:40 p.m.
T. Concrete F.	38	52
T. Air F.	36	47

Jt. No.	Type	Gage Inches	Gage inches	Jt. Width Change inches
1	Exp.	5.064	5.048	-.016
2	C	5.108	5.088	-.020
6	C	5.135	5.113	-.022
11	C	5.059	5.038	-.021
20	C	5.045	5.026	-.019
22	C	5.114	5.090	-.024
31	C	5.088	5.066	-.022
36	C	5.132	5.101	-.031
40	C	5.145	5.115	-.030
41	Exp.	5.970	5.958	-.012

Section No. 3

Time	7:30 a.m.	2:30 p.m.
T. Concrete F.	38	50
T. Air F.	36	46

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	6.137	6.126	-.011
2	C	5.192	5.168	-.024
6	C	5.103	5.085	-.018
11	C	5.131	5.110	-.021
16	C	5.204	5.181	-.023
20	C	5.138	5.108	-.030
21	Exp.	4.992	4.978	-.014

Section No. 5

Time	7:20 a.m.	2:20 p.m.
T. Concrete F.	38	51
T. Air F.	36	46

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	6.134	6.110	-.024
8	C	5.099	5.084	-.015
9	C	5.028	5.002	-.026
10	C	5.072	5.046	-.026
11	C	5.065	5.046	-.019
12	C	5.044	5.030	-.014
13	Exp.	5.147	5.119	-.028

Note: Measurement of the daily change in widths of the joints in Section No. 4 is not scheduled.

Section No. 6

Time	7:10 a.m.	2:10 p.m.
T. Concrete F.	38	51
T. Air F.	35	46

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
3	Exp.	5.248	5.190	-.058
4	C	5.574	5.520	-.054
5	Exp.	5.432	5.376	-.056
6	C	5.190	5.137	-.053
7	Exp.	5.188	5.128	-.060

Section No. 7

Time	7:00 a.m.	2:00 p.m.
T. Concrete F.	38	51
T. Air F.	35	46

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	5.976	5.955	-.021
8	C	5.083	5.052	-.031
9	C	5.344	5.320	-.024
10	C	5.188	5.168	-.020
11	C	4.922	4.900	-.022
12	C	5.133	5.105	-.028
13	Exp.	5.890	5.870	-.020

Section Standard

Time	8:15 a.m.	3:05 p.m.
T. Concrete F.	40	51
T. Air F.	38	47

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
17	Exp.	5.516	5.491	-.025
18	C	5.181	5.157	-.024
19	C	5.104	5.081	-.023
20	C	5.215	5.189	-.026
21	Exp.	5.502	5.478	-.024
22	C	5.092	5.069	-.023
23	C	5.143	5.115	-.028
24	C	5.018	5.000	-.018
25	Exp.	5.155	5.124	-.031

SUMMARY OF THE DAILY CHANGES IN WIDTHS OF THE JOINTS FEB. 25, 1941.

Section No. 1. Design - contraction joints only, spaced 20 feet apart. For an increase in pavement temperature of 14 F., the average decrease in width of the joints was .020 inches.

Section No. 2. Design - expansion joints spaced 800 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 14 F., the average decrease in width of the expansion joints was .014 inches, and the average decrease in width of the contraction joints was .024 inches.

Section No. 3. Design - expansion joints spaced 400 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 12 F., the average decrease in width of the expansion joints was .013 inches, and the average decrease in width of the contraction joints was .023 inches.

Section No. 5. Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 13 F., the average decrease in width of the expansion joints was .026 inches, and the average decrease in width of the contraction joints was .020 inches.

Section No. 6. Design - alternate expansion and contraction joints spaced 60 feet apart. For an increase in pavement temperature of 13 F., the average decrease in width of the expansion joints was .058 inches, and the average decrease in width of the contraction joints was .054 inches.

Section No. 7. Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 13 F., the average decrease in width of the expansion joints was .021 inches, and the average decrease in width of the contraction joints was .025 inches.

Section Standard Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 30 feet apart. For an increase in pavement temperature of 11 F., the average decrease in width of the expansion joints was .027 inches, and the average decrease in width of the contraction joints was .024 inches.

XVI. SEASONAL CHANGES IN JOINT WIDTH MEASUREMENTS NOV. 27, 1940 and FEB. 24, 1941

PRELIMINARY DATA

The seasonal changes in width of the joints between November 27, 1940 and February 24, 1941 are as follows:

Section No. 1

Date	11-27-40	2-24-41
Time	3:00 p.m.	3:00 p.m.
T. Concrete F.	40	43
T. Air F.	34	42

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	C	5.060	5.049	-.011
3	C	5.212	5.200	-.012
5	C	5.032	5.019	-.013
7	C	5.132	5.128	-.004
9	C	5.046	5.039	-.007
13	C	5.052	5.040	-.012
17	C	5.076	5.056	-.020
21	C	5.009	4.999	-.010
25	C	5.079	5.075	-.004
29	C	4.963	4.949	-.014
33	C	4.986	4.980	-.006
37	C	5.014	4.998	-.016
41	C	5.104	5.092	-.012
45	C	4.756	4.746	-.010
49	C	4.994	4.988	-.006
53	C	5.046	5.045	-.001
57	C	5.045	5.040	-.005
59	C	5.020	5.005	-.015
61	C	5.121	5.109	-.012
63	C	5.123	5.135	+.012
65	C	5.098	5.084	-.014

Section No. 2

Date	11-27-40	2-24-41
Time	2:30 p.m.	2:30 p.m.
T. Concrete F.	40	42
T. Air F.	34	42

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.072	5.055	-.017
2	C	5.080	5.100	+.020
4	C	5.125	5.111	-.014
6	C	5.145	5.127	-.018
8	C	5.072	5.065	-.007
10	C	5.116	5.108	-.008
12	C	5.035	5.030	-.005
14	C	5.069	5.064	-.005
16	C	5.047	5.035	-.012
18	C	5.146	5.152	+.006
20	C	5.042	5.040	-.002
22	C	5.119	5.104	-.015
24	C	5.068	5.064	-.004
26	C	5.064	5.056	-.008
28	C	5.046	5.037	-.009
30	C	5.062	5.050	-.012
32	C	5.064	5.060	-.004
34	C	5.103	5.092	-.011
36	C	5.135	5.124	-.011
38	C	5.051	5.038	-.013
40	C	5.137	5.130	-.007
41	Exp.	5.992	6.099	+.107

Section No. 3

Date	11-27-40	2-24-41
Time	2:00 p.m.	2:00 p.m.
T. Concrete F.	40	42
T. Air F.	34	41

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	6.167	6.137	-.030
2	C	5.180	5.181	+.001
4	C	5.012	5.010	-.002
6	C	5.114	5.098	-.016
8	C	5.156	5.144	-.012
10	C	5.168	5.170	+.002
12	C	5.052	5.037	-.015
14	C	5.285	5.274	-.011
16	C	5.218	5.197	-.021
18	C	5.027	5.018	-.009
20	C	5.124	5.123	-.001
21	Exp.	5.008	4.990	-.018
41	Exp.	5.971	5.948	-.023

Section No. 4

Date	11-27-40	2-24-41
Time	1:30 p.m.	1:30 p.m.
T. Concrete F.	40	42
T. Air F.	34	42

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	5.888	5.856	-.032
8	C	5.077	5.084	+.007
9	C	5.149	5.140	-.009
10	C	5.069	5.055	-.014
11	C	5.128	5.131	+.003
12	C	5.038	5.056	+.018
13	Exp.	5.025	4.992	-.033
19	Exp.	6.052	6.026	-.026
20	C	5.118	5.116	-.002
21	C	5.055	5.054	-.001
22	C	5.045	5.048	+.003
23	C	5.040	5.039	-.001
24	C	5.176	5.173	-.003
25	Exp.	4.954	4.930	-.024

Section No. 5

Date	11-27-40	2-24-41
Time	1:00 p.m.	1:00 p.m.
T. Concrete F.	40	42
T. Air F.	34	42

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	6.164	6.124	-.040
8	C	5.098	5.100	+.002
9	C	5.032	5.020	-.012
10	C	5.079	5.063	-.016
11	C	5.052	5.059	+.007
12	C	5.039	5.043	+.004
13	Exp.	5.148	5.137	-.011
19	Exp.	6.113	6.085	-.028
20	C	5.028	5.029	+.001
21	C	5.104	5.097	-.007
22	C	5.122	5.107	-.015
23	C	5.104	5.098	-.006
24	C	5.197	5.199	+.002
25	Exp.	5.181	5.167	-.014

Section No. 6

Date	11-27-40	2-24-41
Time	12:30 p.m.	12:30 p.m.
T. Concrete F.	40	42
T. Air F.	32	41

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.588	5.562	-.026
2	C	5.032	5.020	-.012
3	Exp.	5.248	5.230	-.018
4	C	5.560	5.560	.000
5	Exp.	5.449	5.418	-.031
6	C	5.173	5.177	+.004
7	Exp.	5.191	5.169	-.022
8	C	5.264	5.261	-.003
9	Exp.	5.561	5.546	-.015
10	C	5.170	5.164	-.006
11	Exp.	5.999	5.990	-.009

Section No. 7

Date	11-27-40	2-24-41
Time	12:00 m.	12:00 m.
T. Concrete F.	40	42
T. Air F.	32	41

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	6.024	5.969	-.055
8	C	5.061	5.072	+.011
9	C	5.345	5.339	-.006
10	C	5.185	5.184	-.001
11	C	4.914	4.915	+.001
12	C	5.123	5.128	+.005
13	Exp.	5.930	5.884	-.046
19	Exp.	5.425	5.374	-.051
20	C	5.032	5.032	..000
21	C	5.092	5.107	+.015
22	C	5.642	5.617	-.025
23	C	4.922	4.930	+.008
24	C	5.163	5.178	+.015
25	Exp.	5.521	5.484	-.037

Section Standard

Date	11-27-40	2-24-41
Time	3:30 p.m.	3:30 p.m.
T. Concrete F.	42	43
T. Air F.	34	43

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.225	5.204	-.021
2	C	4.956	4.955	-.001
4	C	5.129	5.139	+.010
6	C	4.986	4.987	+.001
8	C	5.096	5.104	+.008
10	C	5.064	5.057	-.007
11	C	5.012	5.018	+.006
12	C	5.156	5.144	-.012
14	C	5.060	5.058	-.002
16	C	4.998	4.997	-.001
17	Exp.	5.530	5.513	-.017
18	C	5.184	5.179	-.005
19	C	5.110	5.099	-.011
20	C	5.200	5.208	+.008
21	Exp.	5.516	5.502	-.014
22	C	5.096	5.088	-.008
23	C	5.144	5.136	-.008
24	C	5.016	5.020	+.004
25	Exp.	5.149	5.145	-.004
26	C	5.188	5.183	-.005
28	C	5.092	5.085	-.007
30	C	5.211	5.210	-.001
31	C	5.112	5.100	-.012
32	C	5.140	5.139	-.001
34	C	5.204	5.208	+.004
36	C	5.084	5.078	-.006
38	C	5.053	5.048	-.005
40	C	5.070	5.072	+.002
41	Exp.	5.280	5.255	-.025

XVII. DAILY CHANGES IN JOINT WIDTH MEASUREMENTS MAY 28, 1941

The changes in widths of the joints which were caused by the daily temperature cycle of May 28, 1941, are as follows:

Section No. 1

Time	5:45 a.m.	3:10 p.m.
T. Concrete F.	79	106
T. Air F.	72	94

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	C	5.024	4.970	-.054
5	C	5.000	4.960	-.040
10	C	4.980	4.953	-.027
29	C	4.918	4.887	-.031
33	C	4.946	4.904	-.042
56	C	4.870	4.838	-.032
61	C	5.081	5.045	-.036
65	C	5.060	5.025	-.035

Section No. 2

Time	5:15 a.m.	2:50 p.m.
T. Concrete F.	79	106
T. Air F.	68	94

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	4.688	4.636	-.052
2	C	5.067	5.030	-.037
6	C	5.102	5.073	-.029
11	C	5.050	5.017	-.033
20	C	5.014	4.985	-.029
22	C	5.089	5.056	-.033
31	C	5.064	5.032	-.032
36	C	5.092	5.048	-.044
40	C	5.115	5.067	-.048
41	Exp.	5.480	5.432	-.048

Section No. 3

Time	5:00 a.m.	2:40 p.m.
T. Concrete F.	80	106
T. Air F.	68	93

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.649	5.611	-.038
2	C	5.172	5.121	-.051
6	C	5.095	5.055	-.040
11	C	5.108	5.081	-.027
16	C	5.173	5.135	-.038
20	C	5.110	5.059	-.051
21	Exp.	4.498	4.441	-.057

Section No. 5

Time	4:45 a.m.	2:30 p.m.
T. Concrete F.	80	106
T. Air F.	68	93

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	5.811	5.750	-.061
8	C	5.136	5.095	-.041
9	C	5.042	5.000	-.042
10	C	5.068	5.028	-.040
11	C	5.085	5.045	-.040
12	C	5.070	5.029	-.041
13	Exp.	4.815	4.734	-.081

Note: Measurement of the daily change in widths of the joints in Section No. 4 is not scheduled.

Section No. 6

Time	4:30 a.m.	2:15 p.m.
T. Concrete F.	81	106
T. Air F.	68	92

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
3	Exp.	4.950	4.793	-.157
4	C	5.560	5.485	-.075
5	Exp.	5.185	5.044	-.141
6	C	5.185	5.108	-.077
7	Exp.	4.875	4.716	-.159

Section No. 7

Time	4:15 a.m.	2:00 p.m.
T. Concrete F.	81	104
T. Air F.	68	92

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	5.653	5.580	-.073
8	C	5.106	5.056	-.050
9	C	5.366	5.320	-.046
10	C	5.199	5.155	-.044
11	C	4.930	4.885	-.045
12	C	5.153	5.100	-.053
13	Exp.	5.575	5.500	-.075

Section Standard

Time	6:00 a.m.	3:30 p.m.
T. Concrete F.	78	104
T. Air F.	75	92

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
17	Exp.	5.269	5.168	-.101
18	C	5.182	5.123	-.059
19	C	5.088	5.048	-.040
20	C	5.222	5.165	-.057
21	Exp.	5.226	5.140	-.086
22	C	5.118	5.066	-.052
23	C	5.128	5.073	-.055
24	C	5.028	4.997	-.031
25	Exp.	4.881	4.772	-.109

SUMMARY OF THE DAILY CHANGES IN WIDTHS OF THE JOINTS MAY 28, 1941

Section No. 1. Design - contraction joints only, spaced 20 feet apart. For an increase in pavement temperature of 27 F., the average decrease in width of the joints was .037 inches.

Section No. 2. Design - expansion joints spaced 800 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 27 F., the average decrease in width of the expansion joints was .050 inches, and the average decrease in width of the contraction joints was .036 inches.

Section No. 3. Design - expansion joints spaced 400 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 26 F., the average decrease in width of the expansion joints was .048 inches, and the average decrease in width of the contraction joints was .041 inches.

Section No. 5. Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 26 F., the average decrease in width of the expansion joints was .071 inches, and the average decrease in width of the contraction joints was .041 inches.

Section No. 6. Design - alternate expansion and contraction joints spaced 60 feet apart. For an increase in pavement temperature of 25 F., the average decrease in width of the expansion joints was .152 inches, and the average decrease in width of the contraction joints was .076 inches.

Section No. 7. Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 20 feet apart. For an increase in pavement temperature of 23 F., the average decrease in width of the expansion joints was .074 inches, and the average decrease in width of the contraction joints was .048 inches.

Section Standard Design - expansion joints spaced 120 feet apart and intermediate contraction joints spaced 30 feet apart. For an increase in pavement temperature of 26 F., the average decrease in width of the expansion joints was .099 inches, and the average decrease in width of the contraction joints was .049 inches.

XVIII. SEASONAL CHANGES IN JOINT WIDTH MEASUREMENTS FEB. 24, 1941 and MAY 27, 1941

The seasonal changes in width of the joints between February 24, 1941 and May 27, 1941 are as follows:

Section No. 1

Date	2-24-41	5-27-41
Time	3:00 p.m.	2:30 p.m.
T. Concrete F.	43	104
T. Air F.	42	92

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	C	5.049	4.972	-.077
3	C	5.200	5.150	-.050
5	C	5.019	4.960	-.059
7	C	5.128	5.071	-.057
9	C	5.039	4.979	-.060
13	C	5.040	5.000	-.040
17	C	5.056	4.995	-.061
21	C	4.999	4.944	-.055
25	C	5.075	5.006	-.069
29	C	4.949	4.888	-.061
33	C	4.980	4.904	-.076
37	C	4.998	4.940	-.058
41	C	5.092	5.024	-.068
45	C	4.746	4.688	-.058
49	C	4.988	4.915	-.073
53	C	5.045	4.980	-.065
57	C	5.040	4.990	-.050
59	C	5.005	4.945	-.060
61	C	5.109	5.046	-.063
63	C	5.135	5.072	-.063
65	C	5.084	5.022	-.062

Section No. 2

Date	2-24-41	5-27-41
Time	2:30 p.m.	2:00 p.m.
T. Concrete F.	42	102
T. Air F.	42	92

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.055	4.645	-.410
2	C	5.100	5.033	-.067
4	C	5.111	5.052	-.059
6	C	5.127	5.072	-.055
8	C	5.065	5.015	-.050
10	C	5.108	5.060	-.048
12	C	5.030	4.985	-.045
14	C	5.064	5.019	-.045
16	C	5.035	4.987	-.048
18	C	5.152	5.093	-.059
20	C	5.040	4.983	-.057
22	C	5.104	5.056	-.048
24	C	5.064	5.010	-.054
26	C	5.056	5.000	-.056
28	C	5.037	4.984	-.053
30	C	5.050	4.980	-.070
32	C	5.060	5.003	-.057
34	C	5.092	5.032	-.060
36	C	5.124	5.046	-.078
38	C	5.038	4.972	-.066
40	C	5.130	5.064	-.066
41	Exp.	6.099	5.441	-.658

Section No. 3

Date	2-24-41	5-27-41
Time	2:00 p.m.	1:45 p.m.
T. Concrete F.	42	100
T. Air F.	41	90

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	6.137	5.622	-.515
2	C	5.181	5.124	-.057
4	C	5.010	4.960	-.050
6	C	5.098	5.055	-.043
8	C	5.144	5.100	-.044
10	C	5.170	5.116	-.054
12	C	5.037	4.977	-.060
14	C	5.274	5.225	-.049
16	C	5.197	5.139	-.058
18	C	5.018	4.963	-.055
20	C	5.123	5.060	-.063
21	Exp.	4.990	4.463	-.527
41	Exp.	5.948	5.420	-.528

Section No. 4

Date	2-24-41	5-27-41
Time	1:30 p.m.	1:20 p.m.
T. Concrete F.	42	100
T. Air F.	42	90

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	5.856	5.576	-.280
8	C	5.084	5.060	-.024
9	C	5.140	5.108	-.032
10	C	5.055	5.020	-.035
11	C	5.131	5.098	-.033
12	C	5.056	5.010	-.046
13	Exp.	4.992	4.755	-.237
19	Exp.	6.026	5.783	-.243
20	C	5.116	5.068	-.048
21	C	5.054	5.008	-.046
22	C	5.048	4.975	-.073
23	C	5.039	4.998	-.041
24	C	5.173	5.152	-.021
25	Exp.	4.930	4.599	-.331

Section No. 5

Date	2-24-41	5-27-41
Time	1:00 p.m.	1:00 p.m.
T. Concrete F.	42	100
T. Air F.	42	88

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	6.124	5.774	-.350
8	C	5.100	5.094	-.006
9	C	5.020	5.003	-.017
10	C	5.063	5.032	-.031
11	C	5.059	5.046	-.013
12	C	5.043	5.032	-.011
13	Exp.	5.137	4.765	-.372
19	Exp.	6.085	5.728	-.357
20	C	5.029	5.019	-.010
21	C	5.097	5.082	-.015
22	C	5.107	5.060	-.047
23	C	5.098	5.072	-.026
24	C	5.199	5.194	-.005
25	Exp.	5.167	4.821	-.346

Section No. 6

Date	2-24-41	5-27-41
Time	12:30 p.m.	12:15 p.m.
T. Concrete F.	42	99
T. Air F.	41	90

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.562	5.182	-.380
2	C	5.020	4.960	-.060
3	Exp.	5.230	4.853	-.377
4	C	5.560	5.490	-.070
5	Exp.	5.418	5.082	-.336
6	C	5.177	5.110	-.067
7	Exp.	5.169	4.775	-.394
8	C	5.261	5.187	-.074
9	Exp.	5.546	5.185	-.361
10	C	5.164	5.114	-.050
11	Exp.	5.990	5.590	-.400

Section No. 7

Date	2-24-41	5-27-41
Time	12:00 m.	12:00 m.
T. Concrete F.	42	98
T. Air F.	41	88

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
7	Exp.	5.969	5.618	-.351
8	C	5.072	5.060	-.012
9	C	5.339	5.321	-.018
10	C	5.184	5.162	-.022
11	C	4.915	4.890	-.025
12	C	5.128	5.100	-.028
13	Exp.	5.884	5.532	-.352
19	Exp.	5.374	5.022	-.352
20	C	5.032	5.039	+.007
21	C	5.107	5.089	-.018
22	C	5.617	5.573	-.044
23	C	4.930	4.907	-.023
24	C	5.178	5.148	-.030
25	Exp.	5.484	5.175	-.309

Section Standard

Date	2-24-41	5-27-41
Time	3:30 p.m.	2:45 p.m.
T. Concrete F.	43	102
T. Air F.	43	93

Jt. No.	Type	Gage inches	Gage inches	Jt. Width Change inches
1	Exp.	5.204	4.830	-.374
2	C	4.955	4.950	-.005
4	C	5.139	5.124	-.015
6	C	4.987	4.967	-.020
8	C	5.104	5.065	-.039
10	C	5.057	5.034	-.023
11	C	5.018	4.954	-.064
12	C	5.144	5.114	-.030
14	C	5.058	5.021	-.037
16	C	4.997	4.962	-.035
17	Exp.	5.513	5.178	-.335
18	C	5.179	5.124	-.055
19	C	5.099	5.042	-.057
20	C	5.208	5.164	-.044
21	Exp.	5.502	5.145	-.357
22	C	5.088	5.060	-.028
23	C	5.136	5.070	-.066
24	C	5.020	4.993	-.027
25	Exp.	5.145	4.782	-.363
26	C	5.183	5.145	-.038
28	C	5.085	5.053	-.032
30	C	5.210	5.176	-.034
31	C	5.100	5.040	-.060
32	C	5.139	5.100	-.039
34	C	5.208	5.175	-.033
36	C	5.078	5.050	-.028
38	C	5.048	5.020	-.028
40	C	5.072	5.055	-.017
41	Exp.	5.255	4.884	-.371

XIX. CONSTRUCTION DIARY

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 8, 1940

1. Weather
Temp. 9:00 a.m. 72°F. Cloudy
12:00 m. 80°F. "
3:00 p.m. 79°F. "
Slight wind from South.

2. Station Start 737+00.0 at 10:00 a.m.
Station Stop 731+09.5 at 6:15 p.m.
Lin. Ft. 590.5

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time
Placing
Screeds

B-Float

Belt
Broom
B'lap
W-B'lap

6. Condition of Subgrade

Subgrade firm and uniform throughout days run, uniform cut behind planer.

7. Installation of Joints
All Joint Installations O.K.
All Dowel Holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
1/2"-5/8"-1/2"-7/16"

11. Description of Mix
a. Workability Plastic and workable
b. Slump 1-3/4"
c. Mortar Sufficient
d. Segregation None
e. Bleeding Slight in scattered spots A.M. and p.m.
f. Time req. to harden

12. Edging of Joints

No extra water or mortar required.
Joints edging O.K.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-8
b. Begin burlap removal 737+00 at 6:00 a.m. 7-9
c. Burlap removed 731+09.5 at 8:30 a.m. 7-9
d. Pav. thoro. wet 731+09.5 at 8:30 a.m. 7-9
e. Paper in place 733+00 at 8:30 a.m. 7-9
f. Pav. thoro. wet all paper in place 9:30 a.m. 7-9
g. Curing complete all paper removed 9:00 a.m.) 7-12 / 11:00 a.m.)

14. Report on Construction Equipment.

No delays

15. Edges of Concrete

No honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 7-29

17. Pictures

---- Remarks ----

Cleaning and sealing of joints begun at station 737+00, July 29, 1940. The joints were thoroughly scraped with a steel scraper and all loose material removed with a broom. Immediately after cleaning the joints were filled slightly less than flush with crack and joint filler OA-2 which has been previously heated to a temperature of approximately 250°F. This method of joint sealing was used throughout the project. While the workmanship of sealing the joints was satisfactory later inspection showed the seal to be very unsatisfactory for two reasons. The inherent quality of the OA-2, and granular material which had worked into the joints during shoulder construction.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford — FA-125-F(2)S

Daily Observations — Date July 9, 1940

1. Weather
Temp. 9:00 a.m. 74°F. Clear
12:00 m. 86°F. Cloudy
3:00 p.m. 84°F. Cloudy
Rain 12:30 p.m. to 1:00 p.m.
Slight wind from South.

2. Station Start 731+09.5 at 5:00 a.m.
Station Stop 725+40.0 at 12:30 p.m.
Lin. Ft. 569.5

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.

Time	10:25 a.m.	11:52 a.m.
Placing	727+50	726+00
Screeds	727+50	726+00
	728+00	726+60
B-Float	728+10	726+60
	728+40	727+10
Belt	728+90	727+40
Broom	729+10	727+50
B'lap	729+30	727+90
W-B'lap	729+30	727+90
		12:10 p.m.
		727+50

6. Condition of Subgrade

Subgrade firm and uniform throughout days run, uniform cut behind planer.

7. Installation of Joints

All Joint Installations O.K.
All Dowel Holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
1/2"-7/16"-3/4"-1/2"-1/2"

11. Description of Mix
a. Workability Plastic and Workable
b. Slump 1-3/4"
c. Mortar Sufficient
d. Segregation None
e. Bleeding Slight in scattered spots a.m. and p.m.
f. Time req. to harden

12. Edging of Joints

Contraction joints 726+40, 60, 80, edged roughly due to rain. No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-9
b. Begin burlap removal 731+09.5 at 6:00 a.m. 7-10
c. Burlap removed 725+40 at 8:00 a.m. 7-10
d. Pav.thoro. wet 725+40 at 8:00 a.m. 7-10
e. Paper in place 727+50 at 8:00 a.m. 7-10
f. Pav. thoro. wet all paper in place 9:00 a.m. 7-10
g. Curing complete all paper removed 8:00 a.m. / 9:30 a.m. 7-13

14. Report on Construction Equipment.

15. Edges of Concrete

No honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 7-29.

17. Pictures

---- Remarks ----

P.R.A. Beam Sec. No. 7 725+80 at 12:30 p.m.

Several batches mixed after start of rain at 12+30 p.m. Concrete exposed to rain 726+50 to header at 725+40, finishing completed at 1:00 p.m.

Finishing machine makes two to three trips over concrete.

Bull float makes two to four trips over concrete.

Contraction joints 1" in width when completely finished.

High spot left of C.L. at 726+50 rubbed down with carborundum 7-10.

Final broom 9:00 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 10, 1940

1. Weather
Temp. 7:30 a.m. 74°F. Clear
1:45 p.m. 90°F. "
4:00 p.m. 89°F. "
Slight wind from South.

2. Station Start 725+40 at 6:30 a.m.
Station Stop 716+00 at 6:15 p.m.
Lin. Ft. 940.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

1:45 p.m. (T. Conc. 98° (T. Air 90°) 4:00 p.m. (99° (89°)

5:

	9:30 a.m.	11:02 a.m.	1:30 p.m.	2:52 p.m.
Time				
Placing	722+70	720+94	719+50	716+50
Screeds	722+80	721+54	719+50	716+70
	723+20	721+84	720+00	716+90
B-Float	723+20	722+34	720+00	719+00
	723+80	722+64	720+60	719+25
Belt	724+00	722+64	720+60	719+25
Broom	724+60	722+70	720+60	719+50
B'lap	725+00	723+34	721+20	719+90
W-B'lap	725+00	723+34	721+20	720+10

11:15 a.m. 722+70 — 3:10 p.m. 719+50

6. Condition of Subgrade
Subgrade firm and uniform throughout days run, uniform cut behind planer.

7. Installation of Joints
Cap for expansion joint 723+80 caught on screed, and joint tipped. Attempt to straighten very unsatisfactory. Expansion joint filler 721+40 trimmed at C.L., 1/8" opening, wire rack O.K. Some of spot welds on dowel holders for exp. and cont. jts. 721+40 to 725+00 broken in trucking. Attempt to wire holder together in broken spots very unsatisfactory. Inspection made of all dowel holders and broken ones discarded. Error in handling holders corrected.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment.
5/8"-1/2"-1/2"-5/8"-7/16"

11. Description of Mix
a. Workability Plastic and Workable.
b. Slump 1-7/8"
c. Mortar Sufficient
d. Segregation None
e. Bleeding ~~Slight in four spots a.m.~~ Slight p.m.
f. Time req. to harden

12. Edging of Joints
Extra mortar used in finishing Jt. 725+40 worked in by Bull Float. No extra water or mortar used in finishing remainder.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-10
b. Begin burlap removal 725+40 at 5:30 a.m. 7-11
c. Burlap removed 716+00 at 8:50 a.m. 7-11
d. Pav. thoro. wet 716+00 at 8:50 a.m. 7-11
e. Paper in place 720+85 at 8:00 a.m. 7-11
f. Pav. thoro. wet all paper in place 10:30 a.m. 7-11
g. Curing complete all paper removed 6:30 a.m. / 11:00 a.m. 7-15

14. Report on Construction Equipment.
Delay of 25 min. at 6:30 a.m. 725+20. Assembling strike off for wire mesh. Delay of 20 min. at 3:10 p.m. 716+00. Setting subgrade template for curve.

15. Edges of Concrete
Slight honeycomb five places left edge of pavement. Honeycomb in back of lip curb.

16. Joint Sealing
All joints sealed 7-29.

17. Pictures

---- Remarks ----

Beams 1, 2, 3 720+70 at 11:30 a.m.
F.H.A. Beam Sec. No. 6 720+70 at 11:30 a.m.

Section 7 completed, begin Sec. 6 7:00 a.m. 725+00.

No dowels installed in expansion joint 725+00.

Practice of oiling dowels with crankcase oil and large brush and smearing with gloved hand stopped. Beginning at 722 dowels oiled with cylinder oil and paint brush.

Beginning at 719+60 concrete hand placed around dowels before finishing machine.

Delay of 10 min. at 2:00 p.m. 719+00. Installing flume accessories.
Very wet batch 716+40 rt. side near C.L., mixer trouble. Succeeding and preceding batches O.K.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 11, 1940

1. Weather
Temp. 8:00 a.m. 80°F. Clear
12:00 m. 90°F. "
3:00 p.m. 96°F. "
Slight wind from South.

2. Station Start 716+00 at 5:15 a.m.
Station Stop 705+40 at 5:55 p.m.
Lin. Ft. 1060.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:25 a.m. (T. Conc. 88°
(T. Air 86°

5.

Time	a.m. 9:00	10:20	p.m. 2:00	3:27
Placing	712+75	711+95	708+30	707+40
Screeds	713+00	712+10	708+50	707+55
	713+25	712+35	708+70	707+80
B-Float	713+25	712+35	708+90	707+80
	713+50	712+75	709+30	708+00
Belt	713+60	712+75	709+55	708+05
Broom	714+20	712+75	709+55	708+30
B'lap	715+20	713+85	710+00	708+65
W-B'lap	715+20	714+05	710+00	708+65
	10:40 a.m.			3:40 p.m.
	712+75			708+30

6. Condition of Subgrade
Subgrade firm and uniform throughout days run, uniform cut behind planer.

7. Installation of Joints
All Joint Installations C.K.
All Dowel Holders C.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
5/8"-11/16"-1/2"-5/8"-11/16"

11. Description of Mix
a. Workability Plastic and Workable, very uniform.
b. Slump 2-3"
c. Mortar C.A. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight spots near C.L. a.m., none p.m.
f. Time req. to harden

12. Edging of Joints
Joint edging good, no extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-11.
b. Begin burlap removal 716+00 at 6:30 a.m. 7-12
c. Burlap removed 705+40 at 7:45 a.m. 7-12
d. Pav.thoro. wet 705+40 at 7:43 a.m. 7-12
e. Paper in place 711+50 at 7:45 a.m. 7-12
f. Pav. thoro. wet all paper in place 9:20 a.m. 7-12
g. Curing complete all paper removed 6:30 a.m.) 7-13 / 11:03 a.m.)

14. Report on Construction Equipment.
Cap for cont. jt. filler changed from 5/8" out to out width to 1/2" out to out width at station 712+40.

15. Edges of Concrete
Numerous honeycomb spots in lip curb.
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 7-13.

17. Pictures

---- Remarks ----

Beams 4, 5, 6 710+75 at 10:30 a.m.

Section 6 completed, begin Sec. 5 12:00 m. 710+00.

New width finished contraction joint 3/4"

Contraction joints show 1/32" opening 7:30 a.m. 7-12

Finishing completed 7:15 p.m. 7-11.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 12, 1940

1. Weather
Temp. 7:30 a.m. 72°F. Cloudy
12:00 m. 82°F. "
3:00 p.m. 83°F. "
No wind. Rain 12:15 p.m. to 1:30 p.m., Rain 4:00 p.m.

2. Station Start 705+40 at 9:27 a.m.
Station Stop 703+40 at 12:45 p.m.
Lin. Ft. 200.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
12:00 m. (T. Conc. 88°
(T. Air 82°

5.
Time 12:00 m.
Placing 703+75
Screeds 704+00
704+25
B-Float 704+50
704+75
Belt 704+95
Broom 705+20
B'lap 705+40
W-B'lap 705+40

6. Condition of Subgrade
Subgrade firm and uniform, uniform cut behind planer.

7. Installation of Joints
All Joint Installations O.K.
All Dowel Holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/4"-5/8"-5/8"-1/2"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-3/4"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight over entire surface.
f. Time req. to harden

12. Edging of Joints
Extra mortar required in finishing joints sta. 704+00 & 704+20. No extra water or mortar required in finishing remainder.

13. Curing
a. One thickness burlap thoroughly wet during pour None applied.
b. Begin burlap removal 705+40 at 6:30 a.m. 7-13
c. Burlap removed 703+40 at 6:45 a.m. 7-13
d. Pav.thoro. wet 703+40 at 7:15 a.m. 7-13
e. Paper in place 703+40 at 7+15 a.m. 7-13
f. Pav. thoro. wet all paper in place 7:15 a.m. 7-13
g. Curing complete all paper removed 9:30 a.m. / 1:00 p.m. 7-17

14. Report on Construction Equipment.
New 1/8" radius edger for joints.

15. Edges of Concrete
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 7-29.

17. Pictures

---- Remarks ----
Beams 7, 8, 9 703+75 at 12:15 p.m.

Pavement surface covered with burlap during rain. Burlap removed surface finished 1:30 p.m. to 2:45 p.m., burlap replaced 2:55 p.m. Burlap thoroughly wet, no water applied.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 13, 1940

1. Weather
Temp. 8:15 a.m. 67°F. Clear
12:00 m. 81°F. "
3:35 p.m. 80°F. "
Moderate wind from East

2. Station Start 703+40 at 6:15 a.m.
Station Stop 693+29.5 at 5:45 pm.
Lin. Ft. 1010.5

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

10:50 a.m. (T. Conc. 82° (T. Air 74°) 3:35 p.m. (88° (80°)

5.

	a.m.		p.m.	
Time	9:45	11:58	3:20	4:25
Placing	699+45	698+55	695+55	694+40
Screeds	699+70	698+65	695+65	694+50
	699+80	698+80	696+00	694+75
B-Float	700+20	698+90	696+05	695+00
	700+32	699+30	696+35	695+20
Belt	700+80	699+25	696+35	695+40
Broom	701+15	699+45	696+40	695+55
B'lap	702+05	699+85	697+30	696+70
W-B'lap	702+25	699+85	697+30	696+70
	12:22 p.m.		4:55 p.m.	
	699+45		695+55	

6. Condition of Subgrade

Subgrade firm and uniform, uniform cut behind planer 695+00 to 703+40. Subgrade spongy and non-uniform 693+29.5 to 695+00.

7. Installation of Joints

Exp. Jt. 699+80 bad connection at C.L. Contractor instructed that expansion jts. must have positive connection at C.L. All dowel holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

Good Alignment
3/4"-7/16"-1/2"-5/8"-5/8"-1/2"

11. Description of Mix
a. Workability Plastic and workable, uniform.
b. Slump 1-3/4"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight bleeding throughout day.
f. Time req. to harden

12. Edging of Joints

Joint edging O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-13
b. Begin burlap removal 703+40 at 6:00 a.m. 7-14
c. Burlap removed 697+80 at 8:30 a.m. 7-14
d. Pav. thoro. wet 697+80 at 8:30 a.m. 7-14
e. Paper in place 698+20 at 8:30 a.m. 7-14
f. Pav. thoro. wet all paper in place 9:30 a.m. 7-14
g. Curing complete all paper removed ~~1:00 p.m.~~ 9:30 a.m. 7-17

14. Report on Construction Equipment.

1/8" Edger for cont. jts. working O.K. handle moved and width cut to 3-1/2". Finished cont. jts. 3/4" wide.

15. Edges of Concrete

No honeycomb in pavement edges. Slight honeycomb in back of lip curb rt. side.

16. Joint Sealing

All joints sealed 7-29.

17. Pictures

---- Remarks ----

Beams 10,11,12 698+50 at 11:40 a.m.

Paver stopped 10+42 a.m. to 11:06 a.m. broken clam cable.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 14, 1940 (Sun.)

1. Weather
Temp.
8:45 a.m. 76°F. Clear
12:00 m. 84°F. "
3:00 p.m. 86°F. "
Slight wind from S.E.
No Concrete Placed.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

7. Installation of Joints

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav. thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

17. Pictures

---- Remarks ----

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 15, 1940

1. Weather
Temp. 8:15 a.m. 79°F. Cloudy
3:00 p.m. 86°F. "
Sun shining through clouds.
Slight wind from Southwest.

2. Station Start 693+29.5 at 5:15 a.m.
Station Stop 681+00.6 at 5:40 p.m.
Lin. Ft. 1228.9 12 hr. 25 min.

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:00 a.m. (Tem. Conc. 82°F. 4:10 p.m. (92°F.
(Tem. Air 79°F. (85°F.

5.

	a.m.		p.m.	
Time	9:40	11:10	2:00	3:30
Placing	689+20	687+70	685+00	683+35
Screeds	689+30	687+85	685+10	683+40
	689+60	688+20	685+35	683+80
B-Float	689+70	688+30	685+40	684+00
	690+40	688+70	685+90	684+50
Belt	690+45	688+90	686+00	684+60
Broom	691+00	689+20	686+10	685+00
B'lap	692+40	690+50	687+00	685+40
W-B'lap	692+40	690+50	687+50	685+40

12:15 p.m. 689+20 — 4:05 p.m. 685+00

6. Condition of Subgrade
693+29.5 to 691+00 very spongy
691+00 681+00 O.K.
Sprinkled before paper placed.
691+00 to 692+30 scarified and allowed to dry all day 7-14-40.

7. Installation of Joints
690+20 3/4" Gap in Ex. Jt. at C.L.
691+20 Cont. Jt. hit by B-Float, bad align.
691+40 " " " " " " "
691+60 " " " " " " "
Dowel holders O.K. throughout pour.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good alignment.
3/4"-7/8"-5/8"-5/8"

11. Description of Mix
a. Workability Plastic and Workable, uniform
b. Slump 1-1/2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight 5 spots
f. Time req. to harden ~~Initial Set~~ Placed at 687+70 - 11:10 a.m.
Hardened at " - 2:10 p.m.
3 hr.

12. Edging of Joints
No accumulation of mortar.
No extra mortar used in finish.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-15
b. Begin burlap removal 5:00 a.m. 7-16
c. Burlap removed 684+20 at 8:15 a.m. 7-16
d. Pav. thoro. wet 684+50 at 8:15 a.m. 7-16
e. Paper in place 685+00 at 8:15 a.m. 7-16
f. Pav. thoro. wet all paper in place 9:30 a.m. 7-16
g. Curing complete all paper removed 9:00 a.m. / 12:00 m. } 7-19

14. Report on Construction Equipment.
No delays

15. Edges of Concrete
No honeycomb in pav. edges or lip curb.

16. Joint Sealing
All joints sealed 7-29.

17. Pictures

---- Remarks ----
Beams 13,14,15 687+50 at 11:00 a.m
P.R.A. Beam Sec. No. 4 - 687+50 at 11:00 a.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford — FA-125-F(2)S

Daily Observations — Date July 16, 1940

1. Weather
Temp. 8:15 a.m. 78°F. Cloudy
9:50 a.m. 68°F. Rain (Started)
11:00 a.m. 63°F. " (Stopped)
Slight Wind from North

2. Station Start 681+00.6 at 5:15 a.m.
Station Stop 676+39.6 at 10:00 am.
Lin. Ft. 461.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:45(T. Conc. 84°F.
a.m.(T. Air 70°F.

5.
Time 8:30 a.m.
Placing 677+80
Screeds 677+85
678+20
B-Float 678+40
678+85
Belt 678+90
Broom 680+60
B'lap None
W-B'lap None

6. Condition of Subgrade
Sprinkled before paper placed.
Firm and smooth.

7. Installation of Joints
(Exp. Jt. Installed at 676+60 belonged at 676+80. Concrete removed and Jt. moved to 676+80.
Installation O.K.
Dowel holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
1/2"-5/8"-5/8"

11. Description of Mix
a. Workability O.K. (except 681+00 to 680+25)
b. Slump No test (Rain)
c. Mortar (Scales Out. Def. 681 to 680+25)
d. Segregation None O.K. Remainder)
e. Bleeding Slight in 5 spots.
f. Time req. to harden Final Set-No observation (Rain)

12. Edging of Joints
No excess of mortar.
No extra mortar required.

13. Curing damp placed to
a. One thickness burlap t~~xxxxxxxxxxx~~ ~~xxxxxxxxx~~ 680+50 before rain, no sprinkling.
b. Begin burlap removal 5:30 a.m. 7-17
c. Burlap removed 678+25 at 7:30 a.m. 7-17
d. Pav.thoro. wet 678+50 at 7:30 a.m. 7-17
e. Paper in place 679+00 at 7:30 a.m. 7-17
f. Pav. thoro. wet all paper in place 9:45 a.m. 7-17
g. Curing complete all paper removed 7:30 a.m. / 9:30 a.m. 7-20

14. Report on Construction Equipment.
No breakdowns.

15. Edges of Concrete
No honeycomb in pav. edges.
Few scattered spots in lip curb.

16. Joint Sealing
All joints sealed 8-22

17. Pictures

---- Remarks ----

No Beams or Cylinders made.

(Sec. 4 Completed at 6:30 a.m.
Sta. 680+00 Begin Sec. 3)

677+90 to 676+39.6 1:2 Mortar used over entire surface to repair rain damage.

681+00.6 to 677+90 1:2 Mortar used in spots to repair rain damage.

681+00.6 to 679+00 1:2 Mortar used over entire lip curb Right C.L. to repair rain damage.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 17, 1940

1. Weather
Temp.
9:50 a.m. 78°F. Clear-Sun
2:30 p.m. 83°F. Clear-Sun
Moderate Wind from North.

2. Station Start 676+39.6 at 7:30 a.m.
Station Stop 667+19.6 at 6:15 p.m.
Lin. Ft. Lin. Ft. 920.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
10:50(T. Conc. 84°F. 2:30(92°F.
a.m. (T. Air 79°F. p.m.(83°F.

5.

	a.m.		p.m.	
Time	10:15	11:25	1:35	2:35
Placing	674+40	673+20	671+50	670+45
Screeds	674+50	673+25	671+60	670+50
	674+75	673+60	671+85	670+75
B-Float	674+80	673+70	671+95	670+85
	675+00	674+00	672+25	671+25
Belt	675+05	674+15	672+30	671+30
Broom	675+40	674+40	672+35	671+50
B'lap	675+80	674+90	672+80	672+15
W-B'lap	675+80	674+90	672+80	672+15

12:00 m. 674+40 — 2:50 p.m. 671+50

6. Condition of Subgrade
Sprinkled before paper placed. Uniform, and firm, planer cuts good.

7. Installation of Joints
Exp. Jt. 672+80 O.K.
Exp. Jt. 668+80 O.K. (Picture)

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
1/2"-7/16"-3/8"-3/8"-3/8"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-1/2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding None a.m., slight at c.l. p.m.
f. Time req. to harden placed at 670+45 2:35 p.m.
hardened at " 6:00 p.m.
3 hr. 25 min.

12. Edging of Joints
No extra mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-17
b. Begin burlap removal 6:00 a.m. 7-18
c. Burlap removed 669+00 at 7:45 a.m. 7-18
d. Pav.thoro. wet 669+00 at 7:45 a.m. 7-18
e. Paper in place 669+75 at 7:45 a.m. 7-18
f. Pav. thoro. wet all paper in place 8:30 a.m. 7-18
g. Curing complete all paper removed 4:00 a.m.) 7-21
~~7:30 a.m.)~~

14. Report on Construction Equipment.
9:10 to 9:50 a.m. mixer stopped (Crane) 674+75

15. Edges of Concrete
No honeycomb in pav. edges or lip curb.

16. Joint Sealing
All joints sealed 8-22.

17. Pictures 1 to 12 (Mixer 668+60
(Exp. Jt. 668+80

---- Remarks ----

Beams 16,17,18 - 669+75 3:00 p.m.

P.R.A. Beam Sec. No. 3 - 669+75
3:00 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford — FA-125-F(2)S

Daily Observations — Date July 18, 1940

1. Weather
Temp. 7:45 a.m. 74°F. Clear-Sun
1:35 p.m. 88°F.
Numerous W. Clouds-Sun.
Slight wind from East.

2. Station Start 667+19.6 at 5:05 a.m.
Station Stop 654+00.0 at 6:05 p.m.
Lin. Ft. Lin. Ft. 1319.6

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
10:45 a.m. (T. Conc. 88°F. (T. Air 82°F.
12:00 m. (90°F. (84°F.

5.

Time	10:20 a.m.	11:40 a.m.
Placing	662+00	660+60
Screeds	662+05	660+65
	662+35	661+00
B-Float	662+50	661+05
	662+80	661+30
Belt	663+10	661+70
Broom	663+35	662+00
B'lap	663+50	662+60
W-B'lap	664+00	662+80
		12:20 p.m.
		662+00

6. Condition of Subgrade

Excellent, Firm, and uniform.

7. Installation of Joints

Exp. Jt. O.K.
Cont. Jts. O.K. Finished Width 5/8".

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

3/8"-3/4"-11/16"-1/2"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-1/2"
c. Mortar O.K. uniform roll on rear screed.
d. Segregation None
e. Bleeding Slight near edges a.m.; none p.m.
f. Time req. to harden

12. Edging of Joints

O.K. no extra mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-18.
b. Begin burlap removal 5:00 a.m. 7-19
c. Burlap removed 658+00 at 8:00 a.m. 7-19
d. Pav. thoro. wet 658+00 at 8:00 a.m. 7-19
e. Paper in place 659+00 at 8:00 a.m. 7-19
f. Pav. thoro. wet all paper in place 9:30 a.m. 7-19
g. Curing complete all paper removed 5:40 a.m. 7-22 ~~8:00 a.m.~~

14. Report on Construction Equipment.

No delays.

15. Edges of Concrete

No honeycomb in pavement edges.
Slight honeycomb in lip curb.

16. Joint Sealing

All joints sealed 8-22

17. Pictures (Mixer 663+00
12 to 22 (Finishing 663+00

---- Remarks ----

Beams 19,20,21 661+00 11:15 a.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford - FA-125-F(2)S

Daily Observations — Date July 19, 1940

1. Weather
Temp. 8:00 a.m. 80°F. Clear-Sun
1:45 p.m. 88°F. Clear
Few W. Clouds - Sun.
Moderate wind from S.W.

2. Station Start 654+00.0 at 4:55 a.m.
Station Stop 640+99.7 at 6:00 p.m.
Lin. Ft. Lin. Ft. 1300.3

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

9:55 a.m.	(T. Conc. Pl. 88°	1:25 p.m.	(92°
	(" " F. Fin. 88°		(94°
	(T. Air 82°		(88°

5.

	a.m.		p.m.	
Time	9:55	10:50	1:10	2:30
Placing	649+00	648+15	645+80	644+50
Screeds	649+05	648+25	645+85	644+55
	649+40	648+50	646+15	644+70
B-Float	649+50	648+55	646+30	644+80
	650+00	648+35	646+65	645+25
Belt	650+40	648+95	646+75	645+75
Broom	650+42	649+00	646+80	645+80
B'lap	651+45	650+40	647+75	646+20
W-B'lap	651+45	650+75	647+75	646+20
	11:40 a.m.		2:50 p.m.	
	649+00		645+80	

6. Condition of Subgrade
Soft spot entire area Left C.L. 647+20 to 647+60
Soft and spongy entire width pav. 644+30 to 647+20

Remainder spongy spots.

7. Installation of Joints
Exp. Jt. 648+80 O.K.

2:45 p.m. (T. Conc. 94°
(T. Air 88°

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
11/16" - 1/2"

11. Description of Mix
a. Workability Plastic and Workable, Uniform.
b. Slump 1-7/8"
c. Mortar No excess, uniform roll on rear screed.
d. Segregation None
e. Bleeding Slight Spots.
f. Time req. to harden

12. Edging of Joints
Joints edging good, no extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-19
b. Begin burlap removal 5:00 a.m. 7-20
c. Burlap removed 641+80 at 10:00 a.m. 7-20
d. Pav. thoro. wet 641+80 at 10:00 a.m. 7-20
e. Paper in place 642+00 at 10:00 a.m. 7-20
f. Pav. thoro. wet all paper in place 10:20 a.m. 7-20
g. Curing complete all paper removed 9:45 a.m.) 7-23
12:30 p.m.)

14. Report on Construction Equipment.
No delays.
Water device on mixer checked, found to deliver 160.5# at 160.8# and 170# at 170#.

15. Edges of Concrete
No honeycomb in pav. edges or lip curb.

16. Joint Sealing
All joints sealed 8-22.

17. Pictures

---- Remarks ----
Beams 22,23,24 - 647+00 12:15 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford — FA-125-F(2)S

Daily Observations — Date July 20, 1940

1. Weather
Temp.
9:00 a.m. 85°F. Clear-Sun
3:00 p.m. 93°F. " "

Moderate wind from S.W. All Day.

2. Station Start 640+99.7 at 5:10 a.m.
Station Stop 629+29.6 at 5:45 p.m.
Lin. Ft. Lin. Ft. 1170.1

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
(T. Conc. Pl. 91° 5:00 (92°
9:35 (T. " F. Fin. 91° p.m. (92°
a.m. (T. Air 87° (89°

5.

Time	9:20 a.m.	10:30 a.m.
Placing	637+00	635+85
Screeds	637+10	635+95
	637+35	636+20
B-Float	637+40	636+25
	637+65	636+60
Belt	637+68	636+90
Broom	638+40	637+00
B'lap	639+30	637+70
W-B'lap	639+75	637+70
		11:10
		637+70

6. Condition of Subgrade

632 to 632+30 Very Spongy, planer cut uniform. Spongy spots throughout, uniform cut behind planer.

7. Installation of Joints

Exp. Jt. 632+80 O.K.

Cont. Jt. Width 3/4" Finished, good line.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

Alignment O.K.
9/16"-3/8"-3/8"-3/8"-7/16"-1/2"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-7/8"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight spots at C.L. a.m., none p.m.
f. Time req. to harden

12. Edging of Joints

Joint edging O.K. No extra mortar or water required to finish.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-20
b. Begin burlap removal 4:40 a.m. 7-21
c. Burlap removed 630+00 7:55 a.m. 7-21
d. Pav. thoro. wet 631+00 7:55 a.m. 7-21
e. Paper in place 635+00 7:55 a.m. 7-21
f. Pav. thoro. wet all paper in place 10:00 a.m. 7-21
g. Curing complete all paper removed 10:00 a.m.) 7-24
1:30 p.m.)

14. Report on Construction Equipment.

O.K. No delays.

15. Edges of Concrete

No honeycomb in edges of pav.
Slight honeycomb in lip curb.

16. Joint Sealing

All joints sealed 8-22.

17. Pictures

---- Remarks ----

Beams 25,26,27 634+00 12:15 p.m.

P.R.A. Beam Sec. No. 2-634+00 12:15 p.m.

Finished Sec. 2 at 630+00 4:45 p.m.
Begin Std. Sec. at 630+00 4:45 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford, FA-125-F(2)S

Daily Observations — Date July 21, 1940 (Sun.)

1. Weather
Temp.

7:25 a.m: 76°F. Alt: Cloudy & Sun
(7:15 a.m. to 7:25 a.m. Light Rain)
3:00 p.m. 88°F. Clear-Sun.
No Wind.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav.thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

7. Installation of Joints

17. Pictures

---- Remarks ----

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 22, 1940

1. Weather
Temp.
9:00 a.m. 88°F. Clear-Sun
12:25 p.m. 94°F. " "
3:00 p.m. 93°F. " Alt. Cloudy and Sun.
Moderate wind from S.W. All Day.

2. Station Start 629+29.6 at 5:00 am.
Station Stop 620+10.0 at 6:00 pm.
Lin. Ft. 919.6 (10 hr. 30 min. Breakdown

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

	a.m.		p.m.	p.m.
11:40 a.m.	T.Conc. 95°F.	1:15 p.m.	(97°	3:30 98°
	T.Air 90°F.		(95°	91°

5.

Time	a.m. 11:20	12:50	p.m. 3:45	5:20
Placing	626+10	624+80	622+00	620+80
Screeds	626+20	624+90	622+12	620+85
	626+50	625+20	622+36	621+00
B-Float	626+55	625+30	622+42	621+10
	626+75	625+65	622+62	621+30
Belt	626+80	625+65	622+90	621+30
Broom	627+10	626+10	623+20	622+00
B'lap	627+70	626+30	623+80	622+45
W-B'lap	627+70	626+30	623+80	622+45

1:00 p.m. 626+10 — 5:45 p.m. 622+00

6. Condition of Subgrade
624+00 to 628+25 Spongy Spots. Uniform cut behind planer. Remainder of subgrade fair and uniform cut behind planer. This days pour thru shale cut.

7. Installation of Joints
Dowel holders O.K. Alignment and construction of Joints O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Longitudinal Jt. Alignment O.K.
9/16"-15/16"-7/16"-1/2"-1/2"
L.Spot

11. Description of Mix
a. Workability Plastic and Workable. Uniform.
b. Slump 1"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight bleeding near C.L. a.m. & p.m.
f. Time req. to harden

12. Edging of Joints
Joint edging good, no extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-22
b. Begin burlap removal 5:00 a.m. 7-23
c. Burlap removed 620+50 at 8:55 a.m. 7-23
d. Pav.thoro. wet 621+70 at 8:55 a.m. 7-23
e. Paper in place 621+80 at 8:55 a.m. 7-23
f. Pav. thoro. wet all paper in place 9:30 a.m. 7-23
g. Curing complete all paper removed 8:00 a.m.) 10:30 a.m.) 7-26

14. Report on Construction Equipment.
Placing concrete stopped from 5:45 a.m. to 8:30 a.m. due to broken cable on skip. Conc. Pl. 628 to +50.

15. Edges of Concrete
Spots of honeycomb in pav. edge at 620+40 Lt. of C.L., remainder of pav. edge O.K. Lip curb slight spots of honeycomb throughout.

16. Joint Sealing
All joints sealed 8-23.

17. Pictures 23 & 24 (Removing paper 657+00 to 655.

---- Remarks ----

Beams 28,29,30 620+50 5:00 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 23, 1940

1. Weather
Temp.
9:00 a.m. 89°F. Clear-Sun
12:00 m. 94°F. Alt. Clouds & Sun
3:00 p.m. 92°F. " " "
No Wind, Section thru Wooded Area.

2. Station Start 620+10.0 at 5:00 a.m.
Station Stop 610+82.0 (End Bridge)
Lin. Ft. 928.0 at 5:40 pm.

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:55 a.m. (T.Conc. 92°F. 1:30 p.m. (98°F.
(T.Air 90°F. (90°F.

5.

Time	9:20 a.m.	11:10 a.m.
Placing	616+00	614+20
Screeds	616+05	614+30
	616+25	614+50
B-Float	616+30	614+60
	616+50	614+80
Belt	617+25	614+80
Broom	617+70	616+00
B'lap	618+80	616+00
W-B'lap	619+00	616+40
		11:20 a.m.
		616+00

6. Condition of Subgrade

Good, uniform cut behind planer throughout pour.

7. Installation of Joints
Installation of Exp. & Cont. Joints O.K. Finished Exp. & Cont. Jts. slightly crocked. LaClede dowel holders omitted from Exp. Jt. 611+02 due to length of bridge approach slab steel.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
9/16"+7/16"-7/16"-7/16"

11. Description of Mix
a. Workability Plastic and Workable, Uniform.
b. Slump 1-7/8"
c. Mortar O.K., uniform mortar roll rear screed.
d. Segregation None
e. Bleeding Slight near C.L. a.m. & p.m.
f. Time req. to harden

12. Edging of Joints
Good, no extra mortar or water required to finish.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-23
b. Begin burlap removal 5:30 a.m. 7-24
c. Burlap removed 610+82 at 8:00 a.m. 7-24
d. Pav. thoro. wet 610+82 at 8:00 a.m. 7-24
e. Paper in place *None at 8:00 a.m. 7-24
f. Pav. thoro. wet all paper in place 10:00 a.m. 7-24
g. Curing complete all paper removed 8:30 a.m. ~~11:30 a.m.~~ 7-27

*No paper in place at 8:00 due to difficulty in carrying forms ahead.

14. Report on Construction Equipment.
Finishing machine down from 9:20 a.m. to 9:35, paver stopped during this time. Placing Conc. Stopped 1:30 p.m. to 2:00 p.m., out of steel.

15. Edges of Concrete
No lip curb on this pour.
Slight honeycomb spots, scattered throughout on both sides of C.L.

16. Joint Sealing
All joints sealed 8-23.

17. Pictures

---- Remarks ----

Beams 31,32,33 611+50 at 2:45 p.m.

Hard rain 3:30 p.m. to 4:15 p.m. Placing stopped 3:30 p.m. to 4:45 p.m.- rain. Placing started 4:45 p.m. bridge approach slab poured 610+82 to 611+02, completed 5:30 p.m. Pavement 611+75 to 620+10 covered with burlap before rain, good condition. Pavement 611+02 to 611+32 very wet concrete due to rain.

Tem. Air at 6:00 p.m. 80°F.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 24, 1940

1. Weather
Temp.

9:00 a.m. 84°F. Cloudy
12:00 m. 92°F. Alt. Clouds & Sun
3:00 p.m. 77°F. Cloudy
No Wind, Hard rain, 2:30 p.m. to 2:50 p.m. at 8:25 am.

2. Station Start 609+16.6 (End Bridge)
Station Stop 604+73.0 at 3:00 p.m.
Lin. Ft. 443.6

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.

Time	2:10 p.m.
Placing	605+30
Screeds	605+40
	605+70
B-Float	605+75
	606+05
Belt	606+30
Broom	606+40
B'lap	606+85
W-B'lap	606+85

6. Condition of Subgrade

Moist and firm, uniform cut behind planer.

7. Installation of Joints

Installation of Exp. & Cont. Joints O.K.
Dowel Holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

1/2"-7/16"-9/16"-3/8"

11. Description of Mix
a. Workability Plastic and Workable, Uniform.
b. Slump No test.
c. Mortar O.K. Good mortar roll rear screed.
d. Segregation None
e. Bleeding Slight, near C.L. a.m. & p.m.
f. Time req. to harden

12. Edging of Joints

Joints edging good, no extra mortar or water required to finish

13. Curing
a. One thickness burlap thoroughly wet during pour 7-24
b. Begin burlap removal 5:30 a.m. 7-25
c. Burlap removed 604+73.0 at 7:00 a.m. 7-25
d. Pav. thoro. wet 604+73.0 at 7:30 a.m. 7-25
e. Paper in place None at 7:30 7-25
f. Pav. thoro. wet all paper in place 9:00 a.m. 7-25
g. Curing complete all paper removed 6:00 a.m.) 7-29
9:00 a.m.)

14. Report on Construction Equipment.

No Delays.

15. Edges of Concrete

No lip curb on this Section
Pavement edges O.K.

16. Joint Sealing

All joints sealed 8-23

17. Pictures

---- Remarks ----

No Beams.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 25, 1940

1. Weather
Temp.

9:00 a.m. 89°F. Clear-Sun
12:00 m. 93°F. Alt. Clouds & Sun
3:00 p.m. 92°F. Clear-Sun
Slight wind from S.W.

2. Station Start 604+73.0 at 7:15 am.
Station Stop (602+99.5 at 10:15 am.
(601+14.5 at 11:00 am.
Bridge End (596+66.0 at 6:00 pm.

3. See Daily Report

4. Temp. Conc. Final Finish (Broom) 4:30 p.m.
11:30 a.m. (T.Conc. 98° 3:00 p.m. (100° (98°
(T.Air 94° (92° (89°

5.

Time	2:30 p.m.	4:15 p.m.
Placing	599+00	597+40
Screeds	599+10	597+50
	599+35	597+80
B-Float	599+50	597+90
	599+70	598+30
Belt	599+75	598+40
Broom	600+35	599+00
B'lap	600+90	599+45
W-B'lap	600+90	599+45
		4:35 p.m.
		599+00

6. Condition of Subgrade

Bridge approach slab 602+99.5 to 603+49.5 subgrade very spongy and nonuniform. Remainder of subgrade firm and uniform.

7. Installation of Joints

Joint Installation O.K.
Dowel Holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

Splice at Joint ends wired-begin today. 7/16"-1/2"-3/8"-7/16"

11. Description of Mix
a. Workability Plastic & Workable, Uniform
b. Slump 2"
c. Mortar O.K. good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight bleeding over entire surface a.m.
f. Time req. to harden _____ and p.m.

12. Edging of Joints

Joints edging O.K., no extra water or mortar required.

New 1/8" radius edging tool on project.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-25
b. Begin burlap removal 5:30 a.m. 7-26.
c. Burlap removed 596+66.0 at 7:00 a.m. 7-26
d. Pav. thoro. wet 596+66.0 at 7:00 a.m. 7-26
e. Paper in place None at 7:00 a.m. 7-26
f. Pav. thoro. wet all paper in place 8:30 a.m. 7-26
g. Curing complete all paper removed 6:00 a.m. / 9:00 a.m. 7-29

14. Report on Construction Equipment.

No delays.

15. Edges of Concrete

No lip curb on this section.
No honeycomb in pav. edges.

16. Joint Sealing
All joints sealed 8-23

17. Pictures

---- Remarks ----

Beams 34,35,36 600+40 at 12:30 p.m.

10:15 a.m. to 11:00 a.m. equipment crossing bridge.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 26, 1940

1. Weather

Temp. 9:00 a.m. 89°F. Clear-Sun
12:00 m. 91°F. " "
3:00 p.m. 94°F. " "
No wind.

2. Station Start (Bridge End) (595+01.0 at 5:05 a.m.
Station Stop (588+26.0 at 4:00 p.m.
" " (586+61.0 at 5:00 p.m.
(585+81.0 at 7:05 p.m.

Lin. Ft. 590.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

10:15 a.m.	(T. Conc. 93°	2:30 p.m. (96°
	(T. Air 90°	(94°

5.

Time	9:35 a.m.	11:05 a.m.
Placing	592+20	591+09
Screeds	592+30	591+15
	592+75	591+35
B-Float	592+85	591+40
	593+15	591+75
Belt	593+70	592+05
Broom	594+40	592+20
B'lap	None	592+40
W-B'lap	None	592+40
		11:20 a.m.
		592+20

6. Condition of Subgrade

(594+51.0 to 595+01.0 brdg. appr. Subgrade uniform and firm.) (588+26 to 594+51.0 Subgrade, spongy, non-uniform and rutted.) (585+81.0 to 586+61.0 Subgrade, very spongy and nonuniform, paver run on boards, grade leveled and tamped.)

7. Installation of Joints

All Joint Installations O.K.
All dowel holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

Good Alignment
3/8"-9/16"-1/2"-7/16"

11. Description of Mix

a. Workability Plastic & Workable, Uniform.
b. Slump 1-3/4"
c. Mortar O.K.
d. Segregation None
e. Bleeding None
f. Time req. to harden

12. Edging of Joints

593+00 to 595+01 difficulty in edging joints due to delay in getting equip. through bridge. Remainder of Joints O.K.

13. Curing

a. One thickness burlap thoroughly wet during pour 7-26
b. Begin burlap removal 5:00 a.m. 7-27
c. Burlap removed 585+81.0 at 6:30 a.m. 7-27
d. Pav.thoro. wet 585+81.0 at 6:30 a.m. 7-27
e. Paper in place None at 6:30 a.m. 7-27
f. Pav. thoro. wet all paper in place 9:00 a.m. 7-27
g. Curing complete all paper removed 5:30 a.m.) 7-30
7:00 a.m.)

14. Report on Construction Equipment.

No delays.

15. Edges of Concrete

No lip curb on this section.
Slight honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 8-24.

17. Pictures

---- Remarks ----

Beams 37,38,39 591+50 at 10:30 a.m.
P.R.A. Sec. Std. 591+50 at 10: a.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 27, 1940

1. Weather
Temp. 9:00 a.m. 86°F. Clear
12:00 m.
3:00 p.m. 96°F. Clear-Sun
Slight wind from Southwest.

2. Station Start 585+81.0 at 5:00 a.m.
Station Stop 582+67.0 Brdg. End
" " 581+02.0 " "
" ~~Lin. Ft.~~ " 579+02.0 at 3:15 p.m.
Lin. Ft. 514.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time
Placing
Screeds
B-Float
Belt
Broom
B'lap
W-B'lap

6. Condition of Subgrade
584+17.0 to 585+81.0 Subgrade very spongy and nonuniform, paver run on boards, grade leveled and tamped. 582+67.0 to 584+17.0 Subgrade firm and uniform. 580+52.0 to 581+02.0 Subgrade spongy and nonuniform, grade leveled and tamped behind paver. 579+02.0 to 580+52 Subgrade firm and uniform.

7. Installation of Joints
All Joint Installations O.K.
All Dowel Holders O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/4"-1/2"-5/8"-7/16"-1/2"

11. Description of Mix
a. Workability Plastic and workable.
b. Slump 2"
c. Mortar Sufficient
d. Segregation None
e. Bleeding None a.m. or p.m.
f. Time req. to harden

12. Edging of Joints
No extra water or mortar required, edging O.K.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-27
b. Begin burlap removal 3:00 a.m. 7-28
c. Burlap removed
d. Pav. thoro. wet
e. Paper in place
f. Pav. thoro. wet all paper in place 5:45 a.m. 7-28
g. Curing complete all paper removed ~~8:00 a.m.~~ 10:00 a.m. 7-31

14. Report on Construction Equipment.
No delays.

15. Edges of Concrete
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-24.

17. Pictures

---- Remarks ----
Beams 40,41,42 579+50 at 3:00 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date **July 28, 1940 (Sun.)**

1. Weather
Temp.
9:00 a.m. 88°F. Clear—Sun
12:00 m. " "
3:00 p.m. 96°F.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

7. Installation of Joints

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav. thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

17. Pictures

---- Remarks ----

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 29, 1940

1. Weather
Temp.
9:00 a.m. 91°F. Clear-Sun
12:00 m. 97°F. " "
3:00 p.m. 97°F. " "
Moderate wind from Southwest.

2. Station Start 579+02.0 at 5:15 a.m.
Station Stop 568+00.5 at 6:00 p.m.
Lin. Ft. 1101.5 11 hr. 45 min.

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
10:30(T.Conc. 96° 3:00(101° 4:30(100
a.m. (T.Air 94° p.m.(97° p.m.(93°

5.

	a.m.		p.m.	
Time	10:10	11:30	2:45	4:10
Placing	574+10	573+10	571+00	569+55
Screeds	574+15	573+15	571+05	569+65
	574+45	573+50	571+25	570+00
B-Float	574+60	573+60	571+65	570+10
	575+00	573+90	571+85	570+30
Belt	575+20	574+00	571+90	570+35
Broom	575+60	574+10	572+30	571+00
B'lap	575+90	574+50	572+50	571+15
W-B'lap	575+90	574+50	572+50	571+15
		11:55		4:20 p.m.
		574+10		571+00

6. Condition of Subgrade
568+00.5 to 568+45 Soft and spongy throughout area, leveled and tamped behind paver. Remainder of subgrade firm and uniform; uniform cut behind planer. Subgrade sprinkled in front of planer.

7. Installation of Joints
All Joint Installations O.K.
All dowel holders worked O.K.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-3/8"-9/16"-7/16"-3/8"-3/8"

11. Description of Mix
a. Workability Plastic and Workable, Uniform
b. Slump 1-3/8"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Very slight a.m. and p.m.
f. Time req. to harden placed at 573+10 - 11:30 a.m.
hardened " " 3:45 p.m.
4 hr. 15 min.

12. Edging of Joints
Joint edging O.K., no extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-29
b. Begin burlap removal 5:00 a.m. 7-30
c. Burlap removed 568+00.5 at 6:30 a.m. 7-30
d. Pav. thoro. wet 568+00 at 8:00 a.m. 7-30
e. Paper in place 572+00.0 at 8:00 a.m. 7-30
f. Pav. thoro. wet all paper in place 8:50 a.m. 7-30
g. Curing complete all paper removed 5:00 a.m.) 8-2
~~9:00 a.m.)~~

14. Report on Construction Equipment.
12:00 m. to 1:00 p.m. mixer shut down, cable broke.

15. Edges of Concrete
No Lip Curb on this section.
4 slight honeycomb spots in pavement edge.

16. Joint Sealing
All joints sealed 8-24.

17. Pictures

---- Remarks ----

Beams 43,44,45 567+50 at 5:00 p.m.

12:00 m. to 1:00 p.m. paver stopped, no bulkhead placed. Concrete in front covered with wet burlap, condition O.K. at start.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 30, 1940

1. Weather
Temp. 9:00 a.m. 91°F. Clear-Sun
12:00m. 97°F. " "
3:00 p.m. 82°F. Cloudy-No Sun
Moderate wind from West.

2. Station Start 568+00.5 at 5:00a.m.
Station Stop 557+60.3 at 5:50 p.m.
Lin. Ft. 1040.2

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
8:30(T.Con.90° 12:30(102° 4:30(94°
a.m.(T.Air 89° p.m. (98° p.m.(84°

5.

	a.m.		p.m.	
Time	11:25	12:40	3:50	5:50
Placing	563+40	562+30	559+60	557+60.3
Screeds	563+50	562+40	559+65	557+65
	563+70	562+80	560+00	558+20
B-Float	563+75	562+90	560+10	558+60
	563+95	563+05	560+40	559+00
Belt	564+45	563+08	560+45	559+10
Broom	564+55	563+40	561+00	559+60
B'lap	564+70	563+65	561+10	560+00
W-B'lap	564+70	563+65	561+15	560+00

1:00 p.m. 563+40 — 6:20 p.m. 559+60

6. Condition of Subgrade
567+80 to 568+00.5 Soft and spongy, width of pavement leveled and tamped behind paver. 560+45 to 560+70 soft and spongy right C.L. 558+00 to 559+70 soft and spongy entire width pavement, leveled and tamped behind paver. Remainder O.K.

7. Installation of Joints
Cont. Jt. 560+00 first joint in direction of pour without dowels.

Std. Load transference installed in Const. Joint at 557+60.3

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-3/8"-7/16"-7/16"-9/16"-1/2"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 2-1/2"
c. Mortar O.K. good mortar roll on rear screed.
d. Segregation None
e. Bleeding Excess bleeding 560+00 to 560+50-Wet Concrete
f. Time req. to harden Placed at 562+30 - 12:40 p.m.
hardened " " - 5:00 p.m.
4 hr. 20 min.

12. Edging of Joints
Edging O.K. No extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-30
b. Begin burlap removal 5:00 a.m. 7-31
c. Burlap removed 562+00 at 5:30 a.m. 7-31
d. Pav. thoro. wet 562+00 at 5:30 a.m. 7-31
e. Paper in place 562+00 at 6:15 a.m. 7-31
f. Pav. thoro. wet all paper in place 8:00 a.m. 7-31
g. Curing complete all paper removed 5:00 a.m.) 8-3
8:00 a.m.)

14. Report on Construction Equip.
8:50 a.m. to 9:40 a.m. paver stopped, water device broken.

15. Edges of Concrete
No lip curb on this section. 7 slight honeycomb spots in pavement edge.

16. Joint Sealing
All joints sealed 8-24.

17. Pictures

---- Remarks ----
Beams 46, 47, 48 559+00 at 4:20 p.m.

Finished Std. Sec. 3:15 p.m.
Started on Sec. No. 1

Wire mesh and load transference bars stopped 560+00

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Qwensboro-Hartford FA-125-F(2)S

Daily Observations — Date July 31, 1940

1. Weather
Temp. 9:00 a.m. 84°F. Alt. Cloudy-Sun.
12:00 m. 94°F. Clear-Sun
3:00 p.m. 96°F. " "
Moderate wind from Southwest.

2. Station Start 557+60.3 at 5:10 a.m.
Station Stop 546+31.8 at 6:00 p.m.
Lin. Ft. 1128.5

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
10:00 a.m. (T.Con. 92° 12:00 m. (96° 3:45 p.m. (99°
(T.Air 88° (94° (97°

5.

	a.m. 9:05	10:40	p.m. 3:30	5:00
Placing	553+90	552+30	547+85	547+10
Screeds	553+95	552+35	547+90	547+15
	554+35	552+65	548+20	547+30
B-Float	554+50	552+75	548+30	547+30
	554+70	552+90	548+60	547+50
Belt	554+75	553+35	548+70	547+60
Broom	555+80	553+90	549+00	547+85
B'lap	556+00	554+20	549+60	548+30
W-B'lap	556+00	554+20	549+60	548+30

11+00 a.m. 553+90 — 5:10 p.m. 547+85

6. Condition of Subgrade
Sprinkled in front of paver. Subgrade throughout pour firm and uniform, uniform cut behind paver.

7. Installation of Joints
Contraction Joint Cutter out of alignment 557+00 to 552, resulting in crooked joints. Cutter straightened, contraction joints 552 to 546 O.K. No load transference bars used in contraction joints. Standard Load Transference Installed in Construction Joint at 546+31.8.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
7/16"-7/16"-1/2"-9/16"-1/2"

11. Description of Mix
a. Workability Plastic & Workable, uniform.
b. Slump 1-1/2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding None a.m. or p.m.
f. Time req. to harden

12. Edging of Joints
O.K. No extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 7-31
b. Begin burlap removal 5:00 a.m. 8-1
c. Burlap removed 546+31.8 at 6:30 a.m. 8-1
d. Pav. thoro. wet 550+00 at 7:45 a.m. 8-1
e. Paper in place 551+30 at 7:45 a.m. 8-1
f. Pav. thoro. wet all paper in place 9:30 a.m. 8-1
g. Curing complete all paper removed 5:00 a.m. ~~7:00 a.m.~~ 8-5

14. Report on Construction Equipment.
No delays.

15. Edges of Concrete
No honeycomb in pav. edges.
Slight honeycomb in lip curb.

16. Joint Sealing
All joints sealed 8-24

17. Pictures

---- Remarks ----
Beams 49,50,51 547+00 at 3:45 p.m.
Paver stopped 11:30 a.m. to 11:45, waiting on information concerning Wye Construction.
Butt joint between Wye and pavement, no recess joint or tie bars.
Paver stopped 4:30 p.m. to 4:45 p.m. truck delay.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 1, 1940

1. Weather
Temp.
9:00 a.m. 82°F. Clear-Sun
12:00 m. 89°F. " "
3:00 p.m. 94°F. " "
Moderate wind from Southwest.

2. Station Start 546+31.8 at 5:15 a.m.
Station Stop 534+44.0 at 5:45 p.m.
Lin. Ft. 1187.8

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:30 a.m. (T.Con. 88° T.Air 81°) 1:10 p.m. (98° 92°) 3:15 p.m. (97° 92°)

5.

	a.m. 9:25	a.m. 11:00	p.m. 1:00	p.m. 2:40
Time				
Placing	542+55	540+90	539+00	537+25
Screeds	542+60	540+95	539+00	537+30
	543+00	541+20	539+20	537+60
B-Float	543+10	541+50	539+30	537+70
	543+30	541+70	539+50	537+90
Belt	543+35	541+75	539+60	537+95
Broom	544+25	542+55	540+20	539+00
B'lap	545+40	542+90	540+40	539+30
W-B'lap	545+40	542+90	540+40	539+30

11:20 a.m. 542+55 — 2:50 p.m. 539+00

6. Condition of Subgrade
Sprinkled in front of Paver. Subgrade throughout pour firm and uniform, uniform cut behind paver.

7. Installation of Joints
Contraction Joint Cutter straightened, Joint Alignment O.K.
No load transference bars used in Contraction Joints.
Std. Load Transference Installed in construction joint at 534+44.0

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-7/16"-3/8"-3/8"-7/16"-7/16"-3/8"-3/8"

11. Description of Mix
a. Workability Plastic and Workable, uniform
b. Slump 2-1/2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight near C.L. a.m.
f. Time req. to harden placed 542+55 - 9:25 a.m.
hardened " - 1:40 p.m.
4 hr. 15 min.

12. Edging of Joints
Contraction Joints edged O.K.
No extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-1
b. Begin burlap removal 5:00 a.m. 8-2
c. Burlap removed 540+00 at 8:00 a.m. 8-2
d. Pav.thoro. wet 540+00 at 8:00 a.m. 8-2
e. Paper in place 542+00 at 8:00 a.m. 8-2
f. Pav. thoro. wet all paper in place 10:10 a.m. 8-2
g. Curing complete all paper removed 7:00 a.m.) 9:00 a.m.) 8-5

14. Report on Construction Equipment.
No delays.

15. Edges of Concrete
Slight honeycomb spots throughout lip curb.
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-26.

17. Pictures
Form Grader 532+00. Paver 539+00

---- Remarks ----

Beams 52,53,54 538+75 at 1:00 p.m.
P.R.A. Beam Sec. No. 1 538+75 at 1:00 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 2, 1940

1. Weather
Temp.
9:00 a.m. 84°F. Clear-Sun
12:00 m. 89°F. " "
3:00 p.m. 96°F. " "
Slight wind from East

2. Station Start 534+44.0 at 5:05 a.m.
Station Stop 521+24.0 at 6:30 p.m.
Lin. Ft. 1320.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:40(T.Con.88° 12:00(94° 3:00(100°
a.m.(T.Air 86° m. (89° p.m.(96°

5.

	a.m.		p.m.	
Time	8:20	10:20	12:50	1:55
Placing	531+10	529+18	526+75	525+65
Screeds	531+15	529+20	526+80	525+80
	531+40	529+40	527+00	526+00
B-Float	531+45	529+70	527+25	526+05
	531+85	529+90	527+45	526+30
Belt	531+90	530+00	527+50	526+55
Broom	533+40	531+10	528+00	526+75
B'lap	533+90	531+50	528+40	526+90
W-B'lap	533+90	531+50	528+40	526+90
	10:35 a.m.		2:10 p.m.	
	531+10		526+75	

6. Condition of Subgrade
Subgrade sprinkled in front of paver. Soft, loose spot in subgrade entire width roadway. 527+25 to 527+90. Remainder of subgrade firm and uniform, uniform cut behind planer.

7. Installation of Joints
Bad line on all contraction joints due to grade and B-Float distorting joint caps.

Std. Load Transference Installed in construction joint at 521+24.0

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-1/2"-7/16"-7/16"-5/8"-11/16"
7/16"-1/2"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding None a.m. or p.m.
f. Time req. to harden

12. Edging of Joints
Joint edging O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-2
b. Begin burlap removal 5:00 a.m. 8-3
c. Burlap removed 521+24.0 at 6:15 a.m. 8-3
d. Pav.thoro. wet 521+24.0 at 6:20 a.m. 8-3
e. Paper in place 526+00 at 8:00 a.m. 8-3
f. Pav. thoro. wet all paper in place 10:00 a.m. 8-3
g. Curing complete all paper removed 5:30 a.m. 9:00 a.m. 8-6

14. Report on Construction Equipment.
No delays.

15. Edges of Concrete
Slight honeycomb spots in lip curb.
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-26

17. Pictures

---- Remarks ----
Beams 55,56,57 523+00 at 4:00 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 3, 1940

1. Weather
Temp.

9:00 a.m. 85°F. Clear
12:00 m. 92°F. "
3:00 p.m. 93°F. "
Slight wind from South.
No placing of Concrete.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

7. Installation of Joints

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav. thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

17. Pictures

---- Remarks ----

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 3, 1940

1. Weather
Temp.

9:00 a.m. 85°F. Clear
12:00 m. 92°F. "
3:00 p.m. 93°F. "
Slight wind from South.
No placing of Concrete.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

7. Installation of Joints

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav. thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

17. Pictures

---- Remarks ----

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford - FA-125-F(2)S

Daily Observations — Date August 4, 1940 (Sunday)

1. Weather
Temp.

9:00 a.m. 84°F. Cloudy
12:00 m. 92°F. "
3:00 p.m. 91°F. "
Slight wind from Southeast.
No concrete placed.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

7. Installation of Joints

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav. thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

17. Pictures

---- Remarks ----

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 5, 1940

1. Weather
Temp.
9:00 a.m. 86°F. Clear-Sun
12:00 m. 93°F. " "
3:00 p.m. 91°F. Alt. Cloudy-Sun
Moderate wind from Southwest.

2. Station Start 521+24.0 at 5:10 a.m.
Station Stop 508+80.0 at 6:00 p.m.
Lin. Ft. 1244.0 12 hr. 50 min.

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
11:00(T.Con.92° 3:00(96° 4:45(95°
a.m. (T.Air 90° p.m.(91° p.m.(91°

5. Time	a.m. 9:15	10:35	p.m. 2:00	3:40
Placing	517+00	515+60	512+95	511+15
Screeds	517+05	515+65	513+00	511+25
	517+45	516+10	513+25	511+55
B-Float	517+65	516+50	513+40	511+85
	517+85	516+75	513+60	512+20
Belt	517+90	516+80	513+80	512+35
Broom	518+60	517+00	513+90	512+95
B'lap	519+70	518+20	514+00	513+10
W-B'lap	519+70	518+20	514+00	513+10
		11:00 a.m.		3:50 p.m.
		517+00		512+95

6. Condition of Subgrade

Subgrade sprinkled in front of paver. Subgrade throughout days run firm and uniform, uniform cut behind paver.

7. Installation of Joints

Good Alignment on Contraction Joints throughout run.
Expansion Joint Installation 510+00 O.K. Std. Load Transference Installed in construction Joint 508+80.0

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-5/16"-1/2"-3/8"-7/16"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-1/2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight over entire surface a.m. & p.m.
f. Time req. to harden placed 515+00 - 11:45 a.m.
hardened " 5:30 p.m.
5 hr. 45 min.

12. Edging of Joints

Pavement 517+00 to 521 partially set before Joint edging, edges rough and uneven, remainder O.K. No extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-5
b. Begin burlap removal 5:00 a.m. 8-6
c. Burlap removed 508+80.0 at 8:40 a.m. 8-6
d. Pav.thoro. wet 508+80.0 at 8:40 a.m. 8-6
e. Paper in place 514+00 at 8:40 a.m. 8-6
f. Pav. thoro. wet all paper in place 9:50 a.m. 8-6
g. *Curing complete all paper removed 11:00 a.m.) 8-8
2:00 p.m.)

* Curing Incomplete 508+80 to 515+00 24 hrs. burlap and water plus 44 hrs. paper from time of placing, error.

14. Report on Construction Equipment.

No delays.

15. Edges of Concrete

No lip curb on this section.
No honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 8-26.

17. Pictures Cont. Jt. 514+00, Curing days run 512+50. Broom finish 512+50. 1 to 3

---- Remarks ----

Beams 58,59,60 512+75 at 2:30 p.m.

Paver running slow 12:15 p.m. to 12:45 p.m. due to truck delay.

Finished Sec. No. 1 4:15 p.m.
Started on Sec. No. 2.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 6, 1940

1. Weather
Temp.
9:00 a.m. 83°F. Alt. Cloudy-Sun
12:00 m. 82°F. Cloudy
3:00 p.m. 81°F. "
Very light rain 10:30 a.m. to 11:45 a.m. Slight Wind from Southwest.

2. Station Start 508+80.0 at 5:30 a.m.
Station Stop 497+00.0 at 5:55 p.m.
Lin. Ft. 1180.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:40(T.Con.88° 12:40(90° 3:10(91°
a.m.(T.Air 84° p.m. (82° p.m.(81°

5.

	a.m.		p.m.	
Time	9:25	10:30	12:55	2:35
Placing	506+50	505+28	502+70	501+00
Screeds	506+55	505+40	502+75	501+08
	506+85	505+60	503+00	501+33
B-Float	506+90	505+90	503+10	501+50
	507+20	506+05	503+35	501+70
Belt	507+40	506+10	503+50	501+75
Broom	507+60	506+50	504+40	502+70
B'lap	507+80	506+80	504+70	502+90
W-B'lap	507+80	506+80	504+70	502+90

11:15 a.m. 506+50 — 2:45 p.m. 502+70

6. Condition of Subgrade
Subgrade sprinkled in front of paver. Subgrade throughout days run firm and uniform, uniform cut behind paver.

7. Installation of Joints
Good Alignment on contraction Joints throughout run.
Expansion Joint Installation 502+00 O.K.
Std. Load Transference Installed in construction Joint 497+00.0.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
7/16"-1/2"-1/2"-9/16"-1/2"-1/2"
7/16"-7/16"-1/2"

11. Description of Mix
a. Workability Workable and Plastic, uniform.
b. Slump 1-1/2"
c. Mortar O.K. good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight over entire surface a.m. & p.m.
f. Time req. to harden placed 506+50 - 9:25 a.m.
hardened " - 2:30 p.m.
5 hr. 5 min.

12. Edging of Joints
Joint edging O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-6
b. Begin burlap removal 508+80 at 5:00 a.m. 8-7
c. Burlap removed 497+00 at 7:30 a.m. 8-7
d. Pav.thoro. wet 497+00 at 7:40 a.m. 8-7
e. Paper in place 500+75 at 7:25 a.m. 8-7
f. Pav. thoro. wet all paper in place 9:00 a.m. 8-7
g. Curing complete all paper removed 3:30 a.m.) 8-10
6:00 a.m.)

14. Report on Construction Equipment.
Paver stopped 6:05 a.m. to 7:00 a.m. due to failure of water supply pump.

15. Edges of Concrete
No lip curb on this section. Slight scattered spots of honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-26.

17. Pictures

---- Remarks ----
Beams 61,62,63 500+30 at 2:45 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 7, 1940

1. Weather
Temp.
9:00 a.m. 81°F. Clear-Sun
12:00 m. 87°F. " "
3:00 p.m. 92°F. " "
Moderate wind from Southeast.

2. Station Start 497+00.0 at 5:00 a.m.
Station Stop 482+32.3 at 6:15 a.m.
Lin. Ft. 1467.7

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:40(T.Con.86° 12:00(94° 3:00(96°
a.m.(T.Air 81° m. (87° p.m.(92°

5.

	a.m.		p.m.	
Time	9:25	10:55	2:30	4:15
Placing	492+00	490+25	486+40	484+35
Screeds	492+10	490+30	486+50	484+45
	492+35	490+55	486+75	484+75
B-Float	492+65	490+70	486+85	485+00
	492+95	490+95	487+10	485+20
Belt	493+10	491+15	487+30	485+25
Broom	494+60	492+00	488+00	486+40
B'lap	495+60*	492+50	488+20	486+65
W-B'lap	495+60	492+50	488+20	486+65
	11:15 a.m.		4:25 p.m.	
	492+00		486+40	

6. Condition of Subgrade
Subgrade sprinkled in front of paver. Subgrade throughout days run firm and uniform, uniform cut behind paver.

7. Installation of Joints
Expansion Joint Installation 494+00 O.K.
Expansion Joint Installation 486+00 O.K.
Good Alignment on Contraction Joints throughout run.
Std. Load Transference Installed in Construction Joint 482+32.3

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-7/16"-3/8"-5/16"-7/16"-5/8"-5/16"
5/16"-9/16"-9/16"

11. Description of Mix
a. Workability Plastic and Workable
b. Slump 2-1/4"
c. Mortar O.K. good mortar roll on rear screed.
d. Segregation None
e. Bleeding None
f. Time req. to harden placed 490+25 - 10+55 a.m. -
hardened " 3:35 p.m.
4 hr. 40 min.

12. Edging of Joints
Joint edging O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-7
b. Begin burlap removal 497+00 at 5:00 a.m. 8-8
c. Burlap removed 488+00 at 6:15 a.m. 8-8
d. Pav.thoro. wet 488+00 at 6:15 a.m. 8-8
e. Paper in place 488+00 at 7:30 a.m. 8-8
f. Pav. thoro. wet all paper in place 3:30 p.m. 8-8
g. Curing complete all paper removed** 488+00 to 482+32 One thickness burlap continuously sprinkled until 3:30 p.m. paper applied 2:30 p.m. to 3:30 p.m. 8-8

14. Report on Construction Equipment.
No Delays.

15. Edges of Concrete
No lip curb on this section.
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-26.

17. Pictures

---- Remarks ----
Beams 64,65,66 490+50 at 10:45 a.m.
P.R.A. Beam Sec. No. 2 490+50 at 10:45 a.m.

* Burlap placing behind because of truck breakdown.

Consistency of mix nonuniform throughout day, due to nonuniform moisture content of aggregate.

** Cure Complete all paper removed 497+00 to 491+00 4:00 a.m. to 8:00 a.m. 8-11
Cure Complete all paper removed 491+00 to 482+32.3 9:00 a.m. to 10:00 a.m. 8-12.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date Aug. 8, 1940

1. Weather
Temp.
9:00 a.m. 79°F. Cloudy-Clear 9:25
12:00 m. 87°F. Clear-Sun a.m.
3:00 p.m. 89°F. " "
Moderate wind from Southeast

2. Station Start 482+32.3 at 5:00 a.m.
Station Stop 469+21.4 at 5:25 p.m.
Lin. Ft. 1310.9

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:10(T.Conc.82° 12:00(90° 3:00(95°
a.m.(T. Air 80° m. (87° p.m.(89°

5.

	a.m.		p.m.	
Time	9:25	11:15	12:50	2:10
Placing	477+85	476+00	474+15	472+75
Screeds	477+90	476+05	474+20	472+80
	478+20	476+35	474+40	473+00
B-Float	478+30	476+55	474+65	473+25
	478+55	476+85	474+90	473+50
Belt	478+80	477+20	475+00	473+60
Broom	480+00	477+85	475+45	474+15
B'lap	480+50	478+10	476+40	474+50
W-B'lap	480+50	478+10	476+40	474+50

11:30 a.m. 477+85 — 2:20 p.m. 474+15

6. Condition of Subgrade
Subgrade sprinkled in front of paver. Subgrade throughout this run firm and uniform, uniform cut behind planer.

7. Installation of Joints
Expansion Joint Installation 478+00 O.K.
Expansion Joint Installation 474+00 O.K.
Expansion Joint Installation 470+00 O.K.
Good Alignment on Contraction Joints.
Std. Load Transference Installed in Construction Joint 469+21.4

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
3/8"-1/2"-9/16"-1/2"-7/16"-1/2"
3/8"-3/8"

11. Description of Mix
a. Workability Plastic and Workable.
b. Slump 1-3/4"
c. Mortar O.K. good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight over entire surface a.m. & p.m.
f. Time req. to harden placed 476+00 - 11:15 a.m.
hardened " - 5:00 p.m.
5 hr. 45 min.

12. Edging of Joints
Joint edging O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-8
b. Begin burlap removal 482+32 at 5:00 a.m. 8-9
c. Burlap removed 478+25 at 5:30 a.m. 8-9
d. Pav.thoro. wet 478+25 at 5:30 a.m. 8-9
e. Paper in place 478+25 at 6:00 a.m. 8-9
f. Pav. thoro. wet all paper in place
g. Curing complete all paper removed Due to insufficient curing paper 478+25 to 469+21.4 was sprinkled continuously and wetted earth cure applied, completed 2:40 p.m. 8-9.

14. Report on Construction Equipment.
No Delays.

15. Edges of Concrete
Slight honeycomb spots in lip curb.
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-27.

17. Pictures Cutting Joint and Installing Filler Contraction Joint 470+40.

---- Remarks ----

Beams 67,68,69 475+25 at 11:30 a.m.

Consistency of mix nonuniform throughout day due to nonuniform moisture content of aggregate.
Two lines of hose sprinkling pavement 469+21.4 to 478+25, 8-10-40 to 8-15-40.
Cure Complete all paper removed 482+32.3 to 478+25 10:00 a.m. to 11:00 a.m. 8-12.
All curing earth removed 478+25 to 469+21.4 1:00 p.m. to 2:00 p.m. 8-29.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 9, 1940

1. Weather
Temp.

9:00 a.m. 83°F. Clear-Sun
12:00 m. 90°F. " "
3:00 p.m. 86°F. Cloudy
Light rain 3:50 p.m. to 4:30 p.m.
Slight wind from Southwest.

2. Station Start 469+21.4 at 4:55 a.m.
Station Stop 459+31.0 at 3:20 p.m.
Lin. Ft. 990.4

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

9:00 a.m.(T. Con. 85° (T. Air 83° 12:00 m.(92° (90° 3:00 p.m.(95° (86°

5.

	a.m.	
Time	9:45	11:15
Placing	464+15	462+50
Screeds	464+20	462+55
	464+40	462+80
B-Float	464+80	463+05
	465+05	463+25
Belt	465+10	463+27
Broom	466+30	464+15
B'lap	466+70	464+60
W-B'lap	466+70	464+60
		11:40 a.m.
		464+15

6. Condition of Subgrade

Subgrade sprinkled in front of paver. Subgrade throughout this run firm and uniform, uniform cut behind planer.

7. Installation of Joints

Expansion Joint Installation 466+00 O.K.
Expansion Joint Installation 462+00 O.K.
Good Alignment on Contraction Joints.
Std. Load Transference Installed in Construction Joint 459+31.0

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
5/8"-5/8"-5/8"-1/2"-1/2"-5/8"
7/16"

11. Description of Mix
a. Workability Workable and plastic, uniform.
b. Slump 1-3/4"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding None a.m. Slight over entire surface p.m.
f. Time req. to harden placed 464+15 - 9:45 a.m.
hardened " 3:15 p.m.
5 hr. 30 min.

12. Edging of Joints

Edging of Joints O.K.
No extra mortar or water required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-9
b. Begin burlap removal 469+21.4 at 5:00 a.m. 8-10
c. Burlap removed 459+31 at 7:45 a.m. 8-10
d. Pav. thoro. wet 461+00 at 8:20 a.m. 8-10
e. Paper in place 461+60 at 8:20 a.m. 8-10
f. Pav. thoro. wet all paper in place 9:00 a.m. 8-10
g. Curing complete all paper removed 5:00 a.m. / 8:30 a.m. 8-14

14. Report on Construction Equipment.

Paver running slow 12:45 p.m. to 2:40 p.m. Water supply pump out of order. Vibrator out of order 12:00 m. to 3:20 p.m.

15. Edges of Concrete

No lip curb on this section. Pavement edge badly honeycombed Rt. of C.L. and slightly honeycombed Lt. of C.L. 459+31 to 462+00. No honeycomb in remainder of pavement edge.

16. Joint Sealing

All joints sealed 8-27.

17. Pictures

---- Remarks ----

Beams 70,71,72 463+00 at 10:30 a.m.
P.R.A. Beam Sec. No. 3 463+00 at 10:30 a.m.
Curing water lines shut off enabling paver to run normal 2:40 p.m. to 3:20 p.m. Placing of concrete stopped at 3:20 p.m. and curing water lines opened.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 10, 1941

1. Weather
Temp.
9:00 a.m. 77°F. Cloudy
12:00 m. 83°F. "
3:00 p.m. 85°F. "
Slight wind from Southwest.

2. Station Start 459+31.0 at 5:30 a.m.
Station Stop 447+90.5 at 5:00 p.m.
Lin. Ft. 1140.5

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:15(T.Con.82° 12:00(85° 3:00(90°
a.m.(T.Air 77° m. (83° p.m.(85°

5.

	a.m. 9:20	11:20	p.m. 1:10	3:15
Time				
Placing	455+60	453+45	452+00	449+70
Screeds	455+65	453+50	452+05	449+75
	455+85	453+80	452+35	450+00
B-Float	455+95	454+10	452+55	450+10
	456+15	454+30	452+75	450+30
Belt	456+70	454+35	452+80	450+35
Broom	458+00	455+60	453+80	452+00
B'lap	458+80	456+00	454+20	452+10
W-B'lap	458+80	456+00	454+20	452+10
		11:50 a.m.		3:20 p.m.
		455+60		452+00

6. Condition of Subgrade
Subgrade sprinkled in front of paver. Soft, loose spot in subgrade entire width rdwy. 459+00 to 459+25. Remainder of subgrade firm and uniform, uniform cut behind planer.

7. Installation of Joints

Exp. Jt.	Installation	458+00	O.K.
"	"	454+00	O.K.
"	"	452+80	O.K.
"	"	451+60	O.K.
"	"	450+40	O.K.
"	"	449+20	O.K.
"	"	448+00	O.K.

Good Alignment on contraction joints.
Change in construction of contraction joints 450+21. Two steel strips 1-1/2" x1/4"x10" inserted 1/4" below surface, no filler used. Std. Load Trans. 447+90.5

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
9/16"-1/2"-5/8"-5/8"-7/16"-1/2"
9/16"-1/2"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-1/2"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Over entire surface a.m., slight p.m.
f. Time req. to harden placed 455+60 - 9:20 a.m.
hardened " 3:00 p.m.
5 hr. 40 min.

12. Edging of Joints
Edging of Joints O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-10
b. Begin burlap removal 459+31.0 at 5:00 a.m. 8-11
c. Burlap removed 450+25 at 7:55 a.m. 8-11
d. Pav.thoro. wet 451+00 at 7:55 a.m. 8-11
e. Paper in place 452+75 at 7:55 a.m. 8-11
f. Pav. thoro. wet all paper in place 8:45 a.m. 8-11
g. Curing complete all paper removed 8:30 a.m. 10:30 a.m. 8-14.

14. Report on Construction Equipment.
New engine for vibrator installed, operating O.K. Paver stopped 11:30 a.m. to 11:50 a.m., repair bucket.

15. Edges of Concrete
No lip curb on this section.
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-27.

17. Pictures

---- Remarks ----
Beams 73,74,75 451+50 at 1:45 p.m.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Qwensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 11, 1940 (Sunday)

1. Weather
Temp.

9:00 a.m. 86°F. Clear
12:00 m. 90°F. "
3:00 p.m. 91°F. Cloudy
Slight wind from South.

2. Station Start _____
Station Stop _____
Lin. Ft. _____

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

5.
Time _____
Placing _____
Screeds _____
_____
B-Float _____
_____
Belt _____
Broom _____
B'lap _____
W-B'lap _____
_____

6. Condition of Subgrade

7. Installation of Joints

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

11. Description of Mix
a. Workability _____
b. Slump _____
c. Mortar _____
d. Segregation _____
e. Bleeding _____
f. Time req. to harden _____

12. Edging of Joints

13. Curing
a. One thickness burlap thoroughly wet during pour _____
b. Begin burlap removal _____
c. Burlap removed _____
d. Pav. thoro. wet _____
e. Paper in place _____
f. Pav. thoro. wet all paper in place _____
g. Curing complete all paper removed _____

14. Report on Construction Equipment.

15. Edges of Concrete

16. Joint Sealing

17. Pictures

---- Remarks ----

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 12, 1940

1. Weather
Temp.

9:00 a.m. 86°F. Clear
12:00 m. 94°F. "
3:00 p.m. 94°F. "
Moderate wind a.m., hard wind from Southeast.

2. Station Start 447+90.5 at 4:50 a.m.
Station Stop 433+82.5 at 6:00 p.m.
Lin. Ft. 1408.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

9:00 a.m.(T.Con.86° (T.Air 86°
12:00 m.(97° (94°
3:00 p.m.(97° (94°

5.

	a.m. 8:40	a.m. 10:10	p.m. 2:35	p.m. 3:40
Time				
Placing	444+14	442+50	437+74	436+44
Screeds	444+15	442+55	437+80	436+50
	444+40	442+80	438+10	436+75
B-Float	444+80	443+10	438+20	437+00
	445+10	443+40	438+50	437+20
Belt	445+20	443+50	438+60	437+25
Broom	446+10	444+14	438+75	437+74
B'lap	446+40	444+70	439+60	438+30
W-B'lap	446+40	444+70	439+60	438+30

10:30 a.m. 444+14 — 4:00 p.m. 437+74

6. Condition of Subgrade

Subgrade sprinkled in front of paver. Subgrade throughout this run firm and uniform, uniform cut behind planer.

7. Installation of Joints

All Expansion Joint Installations O.K. Standard Load Transference Installed in First Contraction Joint Sec. 5 440+00. Contraction Joints Formed by Steel Strips O.K. Better alignment than by use of filler and caps. Standard Load Transference Installed in Construction Joint 433+82.5

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

Good Alignment
1/2"-9/16"-5/8"-5/8"-9/16"-5/8"
9/16"-1/2"-5/8"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump 1-3/4"
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding None a.m. or p.m.
f. Time req. to harden

12. Edging of Joints

Joint edging O.K.

No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-12
b. Begin burlap removal 447+90.5 at 5:30 a.m. 8-13
c. Burlap removed 433+82.5 at 6:30 a.m. 8-13
d. Pav.thoro. wet 433+82.5 at 8:30 a.m. 8-13
e. Paper in place 440+00 at 8:00 a.m. 8-13
f. Pav. thoro. wet all paper in place 11:20 a.m. 8-13
g. Curing complete all paper removed 6:00 a.m.) 8-16 / 10:00 a.m.)

14. Report on Construction Equipment.

No Delays.

15. Edges of Concrete

No lip curb on this section.
No honeycomb in pav. edges.

16. Joint Sealing

All joints sealed 8-27.

17. Pictures Inst. Cont. Jt.

---- Remarks ----

Beams 76,77,78 441+00 at 12:30 p.m.
P.R.A. Beam Sec. No. 4 441+00 at 12:30 p.m.
Finished Sec. No. 4 12:30 p.m., started on Sec. 5.
New curing paper 440+00 to 433+82.5

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 13, 1940

1. Weather
Temp.

9:00 a.m. 78°F. Cloudy
12:00 m. 80°F. "
3:00 p.m. 84°F. "

Light rain 7:30 a.m. to 1:00 p.m.
No Wind.

2. Station Start 433+82.5 at 5:00 a.m.
Station Stop 429+21.0 at 11:30 a.m.
Lin. Ft. 461.5

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

9:00 (T. Conc. 83° (T. Air 78°) 12:00 (87° m. (80°)

5.

Time	10:30 a.m.
Placing	430+29
Screeds	430+30
	430+55
B-Float	430+70
	430+90
Belt	431+30
Broom	432+00
B'lap	432+00
W-B'lap	432+00

6. Condition of Subgrade

Subgrade sprinkled in front of paver. Subgrade throughout this run firm and uniform, uniform cut behind planer.

7. Installation of Joints

All Expansion Joint Installations O.K. Good Alignment on Contraction Joints. Standard Load Transference Installed in Construction Joint 429+21.0

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
5/8"-5/8"-7/16"-9/16"-1/2"-7/16"

11. Description of Mix
a. Workability Plastic and Workable, uniform.
b. Slump No test.
c. Mortar O.K. Good mortar roll on rear screed.
d. Segregation None
e. Bleeding Not distinguishable.
f. Time req. to harden

12. Edging of Joints

Joint edging O.K.

No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-13
b. Begin burlap removal 433+82.5 at 6:00 a.m. 8-14
c. Burlap removed 429+21.0 at 7:00 a.m. 8-14
d. Pav. thoro. wet 429+21.0 at 7:00 a.m. 8-14
e. Paper in place 431+00.0 at 7:15 a.m. 8-14
f. Pav. thoro. wet all paper in place 8:00 a.m. 8-14
g. Curing complete all paper removed 5:00 a.m. ~~6:00 a.m.~~ 8-17

14. Report on Construction Equipment.

No delays.

15. Edges of Concrete

No lip curb on this section.

No honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 8-27.

17. Pictures

---- Remarks ----

No beams or cylinders.

Paver stopped 8:00 a.m. to 9:20 a.m. on account of light rain. Concrete covered with burlap.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 14, 1940

1. Weather
Temp.

9:00 a.m. 86°F. Clear
12:00 m. 92°F. "
3:00 p.m. 89°F. Cloudy
No wind.

2. Station Start 429+21.0 at 5:10 a.m.
Station Stop 419+81.0 at 5:45 p.m.
Lin. Ft. 940.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

9:00(T.Con.88° 3:00(96° 6:00(91°
a.m.(T.Air 86° p.m.(89° p.m.(86°

5.	a.m.		p.m.	
Time	8:00	9:40	4:00	5:50
Placing	426+12	424+60	421+35	419+81
Screeds	426+20	424+70	421+40	419+86
	426+45	425+10	421+65	420+15
B-Float	426+65	425+25	421+80	420+20
	426+96	425+45	422+00	420+45
Belt	427+00	425+50	422+02	420+50
Broom	428+80	426+12	423+25	421+35
B'lap	None	426+50	423+50	421+80
W-B'lap	None	426+50	423+50	421+80
		10:05 a.m.		6:30 p.m.
		426+12		421+35

6. Condition of Subgrade

Subgrade sprinkled in front of paver. Subgrade throughout days run firm and uhiform, uniform cut behind planer.

7. Installation of Joints

Dowel holder on Lt. of C.L. damaged, Cont. Jt. 425+80

All Joint Installations O.K.
All Dowel Holders O.K. (See above note.)

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

Good Alignment
5/8"-9/16"-5/8"-9/16"-9/16"-5/8"
9/16"-9/16"

11. Description of Mix
a. Workability Plastic and workable.
b. Slump 1-1/2"
c. Mortar Correct amount, good roll on rear screed.
d. Segregation None
e. Bleeding Slight in scattered spots a.m. and p.m.
f. Time req. to harden

12. Edging of Joints

Joint edging O.K.

No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-14
b. Begin burlap removal 429+21.0 at 5:30 a.m. 8-15
c. Burlap removed 421+30 at 7:45 a.m. 8-15
d. Pav.thoro. wet 422+00 at 7:45 a.m. 8-15
e. Paper in place 423+20 at 7:45 a.m. 8-15
f. Pav. thoro. wet all paper in place 9:30 a.m. 8-15
g. Curing complete all paper removed 7:00 a.m.) 8-19
9:00 a.m.)

14. Report on Construction Equipment.

Paver stopped at 424+06, 10:30 a.m. to 1:30 p.m. repairing vibrator.

15. Edges of Concrete

No honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 8-27.

17. Pictures

---- Remarks ----

Beams 79.80.81 427+00 at 8:00 a.m.
P.R.A. Beam Sec. No. 5 427+00 at 8:00 a.m.

Begin 70 lb. wire fabric 425+20

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 15, 1940

1. Weather
Temp.

9:00 a.m. 87°F. Clear
12:00 m. 92°F. "
3:00 p.m. 95°F. "
Slight wind from Southeast.

2. Station Start 419+81.0 at 5:00 a.m.
Station Stop 406+81.4 at 6:05 p.m.
Lin. Ft. 1299.6

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)

9:00(T.Con.89° 12:00(95° 3:00(101°
a.m.(T.Air 87° m. (92° p.m.(95°

5.

Time	a.m. 8:45	11:00	p.m. 12:45	2:00
Placing	416+20	413+75	412+00	410+60
Screeds	416+30	413+90	412+10	410+70
	416+70	414+15	412+35	411+00
B-Float	416+75	414+35	412+40	411+05
	416+95	414+65	412+80	411+35
Belt	417+00	414+75	412+90	411+75
Broom	419+20	416+20	413+20	412+00
B'lap	419+30	416+40	413+75	412+10
W-B'lap	419+30	416+40	413+75	412+10
	11:05 a.m.		2:10 p.m.	
	416+20		412+00	

6. Condition of Subgrade

Soft loose spot entire width roadway at 418+40 to 418+70, 409+00 to 410+50, 406+50 to 407+80. Remainder of subgrade firm and uniform.

7. Installation of Joints

All Joint Installations O.K.
All Dowel Holders O.K.

Last contraction joint with load transfer bars 410+21.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth

3/8"-5/8"-1/2"-9/16"-5/8"-3/4"
5/8"-5/8"

11. Description of Mix
a. Workability Plastic and workable.
b. Slump 1-1/2"
c. Mortar Sufficient, good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight scattered spots a.m. and p.m.
f. Time req. to harden

12. Edging of Joints

Joint edging O.K.

No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-15
b. Begin burlap removal 419+81.0 at 5:00 a.m. 8-16
c. Burlap removed 409+00 at 7:45 a.m. 8-16
d. Pav.thoro. wet 409+80 at 7:45 a.m. 8-16
e. Paper in place 410+50 at 7:45 a.m. 8-16
f. Pav. thoro. wet all paper in place 9:00 a.m. 8-16
g. Curing complete all paper removed 9:00 a.m.) 11:30 a.m.) 8-19

14. Report on Construction Equipment.

Unsatisfactory broom finish 417+50 to 419+81, broken broom. New broom secured. Planer adjusted to 7" uniform thickness 410+21.

15. Edges of Concrete

No honeycomb in pavement edges.

16. Joint Sealing

All joints sealed 8-28.

17. Pictures

---- Remarks ----

Beams 82,83,84 417+00 at 9:00 a.m.
P.R.A. Beam Sec. No. 6 417+00 at 9:00 a.m.
End wire mesh in Sec. 6 410+21.
Finished Sec. 6 3:00 p.m., started on Sec. 7.

COOPERATIVE INVESTIGATION OF JOINT SPACING IN CONCRETE PAVEMENTS.

Daviess County Kentucky — Owensboro-Hartford FA-125-F(2)S

Daily Observations — Date August 16, 1940

1. Weather
Temp.
9:00 a.m. 90° Clear
12:00 m. 94° Cloudy
3:00 p.m. 79° Cloudy
Slight Wind from Southwest

2. Station Start 406+81.4 at 5:00 a.m.
Station Stop 397+49.4 at 3:10 p.m.
Lin. Ft. 932.0

3. See Daily Report

4. Temp. Conc. Final Finish (Broom)
9:00(T.Con.90° 12:00(98° 3:00(94°
a.m.(T.Air 90° m. (94° p.m.(79°

5.

	a.m.		p.m.	
Time	9:00	10:30	12:15	1:30
Placing	403+50	401+90	400+00	398+80
Screeds	403+60	402+00	400+05	398+90
	403+80	402+25	400+45	399+15
B-Float	404+10	402+45	400+75	399+25
	404+30	402+70	401+10	399+45
Belt	404+65	402+75	401+15	399+50
Broom	405+40	403+50	401+35	400+00
B'lap	405+75	404+20	401+50	400+40
W-B'lap	405+75	404+20	401+50	400+40
		10:50 a.m.	1:40 p.m.	
		403+50	400+00	

6. Condition of Subgrade
Soft loose spot entire width rdwy. at 399+70 to 400+00. Remainder of subgrade firm and uniform.

7. Installation of Joints
All Joint Installations O.K. Expansion joint filler without dowel bars held in place by steel pins driven on each side of filler Sec. 7. Alignment of completed joints is satisfactory.

8. Omit

9. See Joint Filler Depth Book

10. Longitudinal Joint Depth
Good Alignment
15/16"-1"-1-1/4"-13/16"-7/8"-3/4"-7/8"

11. Description of Mix
a. Workability Plastic and Workable
b. Slump 1-1/2"
c. Mortar Sufficient, good mortar roll on rear screed.
d. Segregation None
e. Bleeding Slight scattered spots a.m. and p.m.
f. Time req. to harden

12. Edging of Joints
Joint Edging O.K.
No extra water or mortar required.

13. Curing
a. One thickness burlap thoroughly wet during pour 8-16
b. Begin burlap removal 406+81.4 at 5:00 a.m. 8-17
c. Burlap removed 397+49.4 at 6:45 a.m. 8-17
d. Pav.thoro. wet 397+49.4 at 6:45 a.m. 8-17
e. Paper in place 402+00 at 6:45 a.m. 8-17
f. Pav. thoro. wet all paper in place 8:00 a.m. 8-17
g. Curing complete all paper removed 11:30 a.m.) 8-19
~~1:30 p.m.)~~

14. Report on Construction Equipment.
No delays.

15. Edges of Concrete
No honeycomb in pavement edges.

16. Joint Sealing
All joints sealed 8-28.

17. Pictures

---- Remarks ----
Beams 85,86,87 402+50 at 10:00 a.m.

P.R.A. Beam Sec. No. 7 402+50 at 10:00 a.m.

70 lb. wire mesh installed in odd length section from beginning of project 397+49.4 to 397+61.1

Placing of concrete on project completed at 397+49.4, 3:10 p.m. August 16, 1940.